Vol. XVII. SEPTEMBER 13th, 1906. No. 11.

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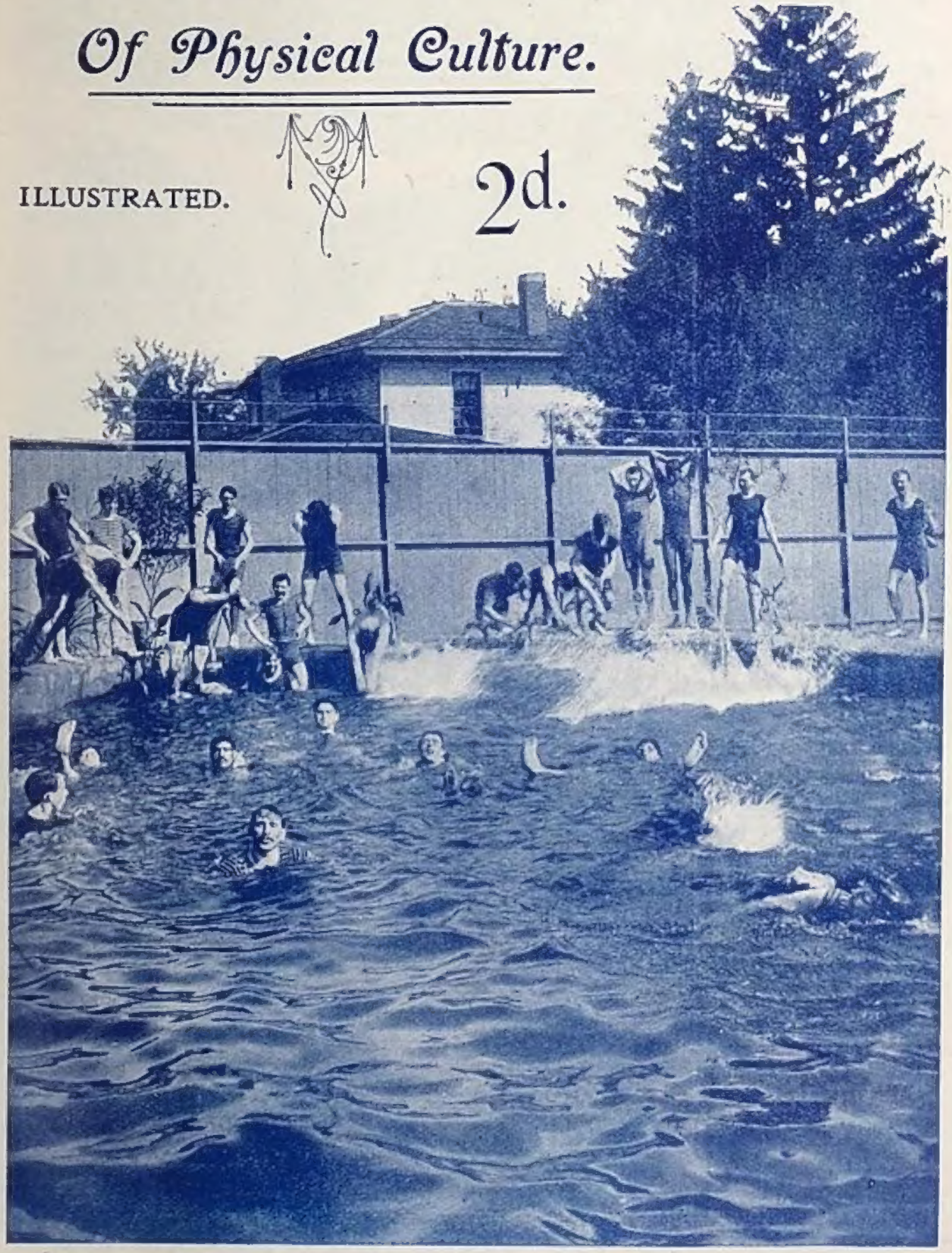

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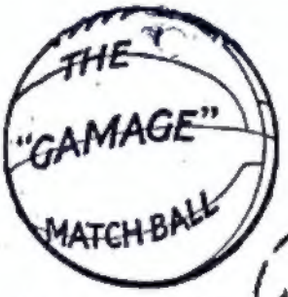

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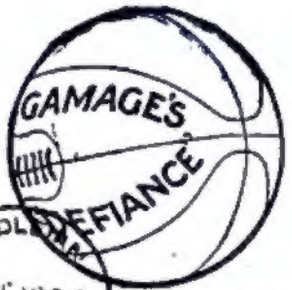

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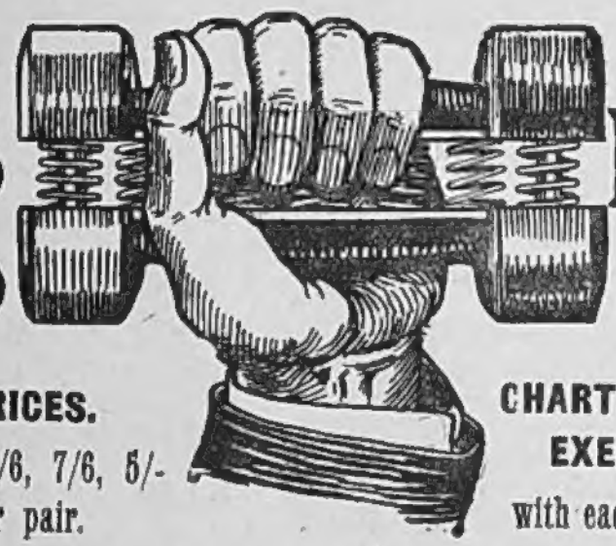

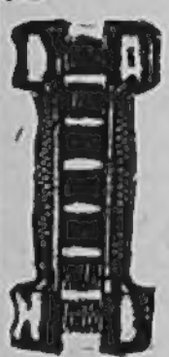

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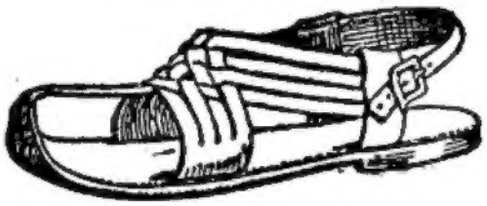

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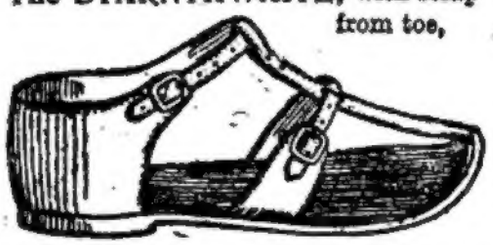

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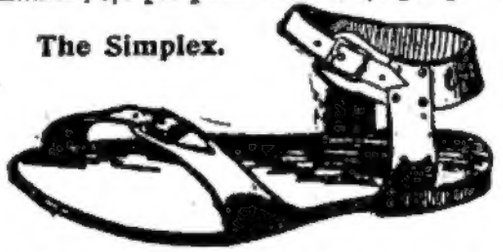

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SANDOW'S MAGAZINE

. . . OF . . .

PHYSICAL CULTURE.

EDITOR: EUGEN SANDOW.

Assistant Editor: FRANK PINK.

MOTTO:—*Mens Sana in Corpore Sano*—A SOUND MIND IN A SOUND BODY.

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NOTES FROM MY NOTE-BOOK.

BY THE EDITOR.

THE question of the State regulation of marriages, like the story of the big gooseberry and the sea serpent, is a recurrent one. It has again been brought to the front at a meeting of the Lancashire Asylums Board, in especial regard to the marriage of the weak-minded and the insane. Few people will dispute the advisability of preventing the perpetuation of the imbecile, the criminal, and the insane, notwithstanding the dictum of George R. Sims that State selection in wedlock would produce a race of "robust nobodies." For the fact remains that the marriage of those who are mentally afflicted is responsible for the progressive degeneration of a nation.

IN this direction prevention is certainly better than cure, and would undoubtedly be less costly. This has been clearly demonstrated by statistics. For instance, it was discovered in New York that within seventy-five years, one thousand two hundred and twenty-five persons have sprung from five sisters, several of whom were illegitimate, and three unchaste, and who married brothers whose father was an idle, thriftless drunkard. Of this family the history of one thousand two hundred and twenty-three was traced, showing a truly appalling criminal record.

OF these, two hundred and eighty had to be kept by the State as paupers; two hundred were actually criminals, while seven were found guilty of the crime of murder. There were one hundred and sixty-five prostitutes and adulteresses begot of this undesirable stock, ninety-one illegitimate children and four hundred and eighty syphilitics. The total cost to the community of this little lot amounted to over £250,000.

IN days gone by, insanity, idiocy, and criminal degeneracy were looked upon as visitations from God, but the student of mental diseases and the criminologist now

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knows that at least twenty-five per cent. of such cases are due to a diseased condition, are preventable, and to a certain extent curable. It is, too, well known that in the marriage of criminals and idiots the progeny are almost sure to inherit the tendency of the parents. In fact, by far the larger number of cases of insanity are to be traced to hereditary influences. Surely, therefore, it is a logical and reasonable step to seek to prevent the union in wedlock of those who have shown evidences of mental abnormalities.

NOTHING is more startling than the awful increase of recent years in cases of insanity. This increase is not apparent only, but painfully real. On January 1st, 1905, the number of the insane was 2630 in excess of the number recorded on the same date of the previous year. In 1859, there was one insane person in every 536 of the total population. In the year following there was one in every 418. In 1879, the proportion was one in every 363, and another year saw a still further increase, one out of every 337 persons being mentally affected, and at the present time the proportion is one in every 285. Bear in mind, too, that these figures only relate to those interned in asylums, whereas many of those who are insane or are on the verge of insanity are not under restraint in any public institution.

I QUITE agree with those distinguished alienists who assert that it ought to be made a legal enactment that prior to marriage every person should be subjected to a careful medical examination. This is the only way in which we can grapple with and check the increase of insanity. At present an insane person is held not to be responsible for his actions. Yet such persons on discharge from an asylum are allowed to marry and perpetuate the species. In Great Britain alone in one year we have spent no less than close on fourteen millions on the care of the mentally degenerate. Such a tax is grossly unfair, and even from a humanitarian point of view it would be more merciful and wise to make such a state of things impossible by law.

I AM afraid that a good many disciples of physical culture neglect their exercises in the summer and autumn to a degree that is very inadvisable. They forget that although cycling, rowing, walking, swimming, tennis, and other outdoor pastimes are all in their way highly desirable and beneficial, that they do not preserve the physical balance, and that, moreover, regular physical culture enables them to enjoy all these outdoor games more keenly. I believe that those who cease carrying out their exercises in the summer would be far wiser to continue them, though on a slightly modified scale. Besides, unless the various muscles are kept in condition during the summer, the resumption of winter exercise finds them weak and flabby, which means the suffering of many aches and pains that would otherwise have been avoided. Don't drop your exercises in the summer, but moderate them slightly.

THE SECRET OF POVERTY.

A DISHEARTENING report is made by Dr. A. E. Dodson, Medical Officer to the Wandsworth Board of Guardians, on the problem of pauperism as it has presented itself to him during his experience of twenty years.

During that period the births in the workhouse numbered 2472. The married mothers numbered only 483, the other 1989 being single women. Of the latter 1170 were delivered of their first illegitimate child, 587 of their second, and 232 of more. The majority of the mothers seemed content to remain year after year in the workhouse, taking a day or two out occasionally, often with an equally unpromising pauper of the opposite sex. Many of these women are of defective intellect.

Dr. Dodson urges (in order to discourage the inmates remaining in the workhouse for the term of their natural life, as many do) the creation of a central establishment where the men may be kept more on the principle that "he who will not work, neither shall he eat."

During his twenty years' experience, adds Dr. Dodson, "100,000 inmates of the workhouse have come under my observation. Of this number I have not come across twenty total abstainers from alcohol—the actual number is, I believe, fifteen."

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NERVOUS PROSTRATION:

What Is it? Why Is it?

THE writer thinks he knows all about it; he has met thousands of people who had it, and he has had it himself.

After working thirty or forty hours steadily, without a minute's sleep and with scarcely a morsel to eat, when one finally falls into bed at three or four o'clock in the morning, he is likely to have all the symptoms of nervous prostration in a fully developed form. But in the writer's experience a good night's sleep makes him well again.

Nervous prostration is a condition in which the nerve centres are exhausted of their stores of energy. Properly speaking, nervous prostration, or, as physicians call it, neurasthenia, is not a disease, but simply a group of symptoms which indicate a weakened state of the nerve centres. But these symptoms and the state of the nerve centres are only indications of some other morbid condition in the constitution of the individual; they are a result.

Nervous exhaustion is frequently attributed to overwork. This is a mistake. Rest will cure all the damage that work can do, leaving out of consideration, of course, structural or mechanical injuries which may result from overstrain.

The only difference between a tired man and a man who has neurasthenia is that the latter is chronically and constitutionally tired. Sleep and rest do not cure him. He is not lazy, but languid; disposed to take up accustomed tasks, but lacking the force and energy to perform them. In most cases this condition has nothing to do with work, unless it be the result of too little work.

Neurasthenia, in the vast multitude of cases, is nothing more or less than chronic poisoning, a state of the body in which the blood and tissues are constantly filled with poisons produced in the alimentary canal in such quantities that the liver cannot destroy them, or the kidneys remove them as fast as they are developed. When this accumulation reaches the point of tissue saturation, then the symptoms of poisoning appear. The nerve centres are stupefied by narcotic poisons produced by indigestion, these poisons being similar in their effects to opium and other narcotic drugs. The brain may be excited by poisons formed in the alimentary canal resembling strychnia in their effects. The whole body may be deranged by toxins and ptomains, which subject the body to a perfect fusillade of toxic influences, as if a whole apothecary shop had been turned into it. A chronic dyspeptic is bound to become a neurasthenic sooner or later—generally sooner—for his stomach and intestines have become the hold of every unclean and hateful germ. They are converted into a factory of nerve irritating, brain stupefying, heart exciting, tissue paralysing poisons, which are capable of deranging every vital function, perforating every vital process, and opening thousands of doors to germs and other causes of disease.

The most important thing to be done for gastric neurasthenia is to remove the causes, to correct the dietary; set the patient to eating right, and his stomach will gladly resume its normal functions, and will become so inhospitable toward the microbic parasites which infest it that they will disappear or perish. The neurasthenic generally recovers soon enough if he can be persuaded to assume a normal mode of life. If he is a self-made prisoner in a counting-room or an office, he must release himself from his fetters, and flee to the liberty of the woods and fields, and in the fresh air find a priceless benison.

He must not only exercise right, but he must eat right. Two meals a day, well eaten, in proper quantity, composed of fruits, grains, and nuts. Nature's choicest products, and which contain

exactly the elements for building brain and muscle, and storing them with vital energy—these are true sources of energy. Flesh affords energy, it is true, but only at second hand and deteriorated.

A neurasthenic should sleep from eight to ten hours a night, or if he cannot sleep, let him lie in bed and rest. A warm bath at bedtime, at ninety-five or ninety-eight degrees temperature, for half an hour or an hour, will often induce sleep when hypnotic drugs of every sort fail utterly unless administered in such overwhelming doses as to produce a poisoned sleep, that is sure to be followed by a wretched awakening. He must cut off all unnecessary expenditure of energy, as a miller sometimes stops his wheel that his pond may fill up. Mental and moral peace and contentment of mind are essential conditions for rapid recovery from neurasthenia.

The daily cold bath has tonic powers equalled by no known drug. The patient should not attempt to administer the bath himself. The water should generally be as cold as can be borne without discomfort. Very cold water can be applied if employed in the right way. The vigour of the application should be increased from day to day, until very strong and powerful effects are produced. In another article in the present number we have undertaken to show how to use water as a tonic. The neurasthenic reader is advised to peruse this article with care, and is assured that by the application of the measures suggested, most excellent results may be obtained.

NATURE'S BODYGUARDS.

By Newton Evans, M.D.

THE purpose of this article is to consider some of the natural means which are at work in the body to prevent the contraction of disease, and to overcome disease processes which may be already at work in the body.

The body is constantly attacked from without and within by the exciting causes of disease, the most common and immediate of which are poisons of different kinds, and disease germs.

In thickly populated localities one is constantly breathing into the lungs and respiratory passages the germs of tuberculosis. Some of the methods which Nature uses to combat these disease germs are partly understood, at any rate, and their study is of much interest.

Throughout the entire length of the respiratory tract, which includes the nasal cavities, the throat, the larynx, or voice box, the trachea, or wind-pipe, and the bronchial tubes, there are found peculiar cells lining the surface, from which project very fine hair-like processes called cilia, which are in constant motion in such a way as to propel forward any substance which may lodge on the surface; and this movement is always from within outward. In this way the respiratory tract is cleared of all particles of dirt and the germs of disease which enter with the air, as well as any mucus which forms within the tract. It is very odd and interesting to watch this movement with a microscope. As the little cilia are moving rapidly it resembles the appearance of a field of grain with the wind blowing over it.

Besides this protection the hairs, which are found in the front part of the nasal cavities, act as screens to screen out a large amount of the coarse particles of dust. In this we see one reason for breathing only through the nostrils. If any of the disease-producing organisms should get past the guard formed by these two protecting agencies, as they often do, there is a third kind of protector. I refer to the white blood cells, or leucocytes, which are found everywhere in the blood, and also throughout all the tissues of the body. These little warriors are found in large numbers in the lungs, and as soon as one of them comes into contact with a disease germ, it immediately proceeds to surround it—eat it up, so to speak—and then to digest it.

But sometimes none of these means of protection are efficient, as when the disease

parasites enter in such large numbers that they cannot be disposed of, or when the walls of the air passages have been wounded by some foreign bodies, such as iron filings or stone dust which may have been inhaled, or when from unhygienic and unhealthful living, overwork, or excess in alcohol or other stimulants, the cells of the blood have so lost their power that they are destroyed by the germs rather than destroying them.

Pneumonia is another disease of the lungs, which is caused by a specific disease germ, and which probably enters those organs by the respiratory passages. The micro-organism of this disease must be present in the air in large numbers at certain seasons of the year, and finds entrance to the lungs of the majority of people. Indeed, during late years pneumonia has become the most deadly of all diseases in this country. Until the last few years tuberculosis has been the cause of more deaths than any other disease; but in the last few years pneumonia has taken its place, and now claims more victims than any other disease. Why is it, then, that such a disease does not attack the whole community, if the cause of the disease is so prevalent? It is because the protective mechanism of the body is in such good working order that the germs are destroyed before they gain a foothold. It is a well known fact that men who are addicted to alcohol are much more subject to pneumonia than others, and that when a drunkard is attacked by the disease, he, almost without exception, dies in a very few days. Why is it? Because his vital resistance is impaired by the poisonous effect of the alcohol. The white blood cells, which in health are able to cope with the pneumonia germs, lose their power to overcome them and destroy them. The same loss of resistance in the tissues may be brought about by long-continued overwork, or by too great exposure to wet and cold. We may say with truth, then, that the real cause of the disease is not the bacteria, but the alcohol, the wet, and the cold, which reduce the power of the body to fight against disease germs.

Another interesting disease whose attacks must be repulsed by the protective mechanism of the body, is typhoid fever. In this case the germ always finds its seat of operation in the intestinal canal, and in order to reach that place must be taken with food or drink into the mouth, and so pass through the stomach into the intestines. In this case we find the bodyguard in the stomach. The secretion and contents of a healthy stomach always contain a certain amount of hydrochloric (muriatic) acid. The principal use of this acid is to aid in the digestion of food, but it has another very important function; the disinfection of the stomach and everything which enters it. Consequently, when a person with a good stomach digestion takes food infected with typhoid fever into the stomach, the germs are destroyed by the acid of the stomach. They are digested. One would not advocate, however, the use of typhoid germs as a dietary. On the other hand, when from excesses of any kind, loss of sleep, or overwork, the stomach fails to perform its work properly, and the blood loses its power of combating the disease, the germs may pass unharmed into the intestine, and gain a foothold.

These may suffice as examples of microbic diseases, and of some of the means which Nature uses to prevent their getting a hold on the body tissues.

The question very naturally arises as to how it is, that after any one has contracted one of these infectious diseases, and the germs have gained a foothold and have begun to grow and multiply, they do not *always* continue to increase, and quickly destroy the life of the patient. How is it that one ever gets well from pneumonia, or typhoid fever, or tuberculosis? Why does not a boil in the skin, when it begins to grow, continue to grow and destroy more and more tissue? As soon as the body recognises the presence of the disease, it immediately sets to work to produce chemical substances to counteract the poisons produced by the germs, and to destroy the life of the germs. These protective substances are carried in the blood of the body; as we are told in the writings of Moses, "the blood is the life," not only in health, but in disease. During the first few days of the disease, it develops very rapidly, and increases in severity; the patient grows steadily worse, until finally the body has gotten its means of

protection into good working order ; then the disease process decreases, the germs become less virulent, and finally die, and the patient begins to get well.

The presence of these protective substances in the blood of an animal having any disease, is taken advantage of by the physician in treating several diseases, The best example of this is diphtheria. Horses are inoculated with increasing doses of the poison (toxin) of diphtheria germs until their blood contains a large amount of the substance (antitoxin) which has been manufactured in the blood to combat the poison of the disease. Blood is then taken from these horses, and its serum is injected into any one who may have the disease, and they improve very rapidly ; or when used on those who do not have the disease, it protects them against contracting it. Thus we see some of the ways in which Nature is always working to give health to the body, and combat disease. If we will but obey the laws of health, we will find that the Creator will keep the body in health. Poisons are continually going into the body in greater or smaller amounts, but much greater amounts are being unceasingly produced in the body, and must be disposed of by the excretory organs, thus making them the most important parts of the protective system.

If we should stop breathing for only a few minutes, the poisons which are normally thrown off by the lungs from the blood would destroy life. If the kidneys become inactive for but a few days, the accumulation of poisons which they should remove, destroys life. The principal outlet for poisons in the body are the lungs, kidneys, liver, skin, and intestines.

An eminent surgeon has said that it seems a greater mystery that any one should continue to live than that life should cease, when we look at the many causes of disease which are constantly at work about us.

Many of the methods which Nature uses to maintain health we do not recognise, and often oppose her efforts by disregarding them. For instance, you may have a headache which is possibly caused by an acute attack of indigestion. The headache is given for the purpose of warning you that something is wrong, and to teach that the act which caused the trouble should not be repeated. But instead of taking the warning, many take a headache powder to stop the pain, and as soon as they are able and have the opportunity will repeat the indiscretion which caused the trouble. The headache powder may stop the pain, but it cannot remove the cause. Pain, then, is one of Nature's best bodyguards.

Among other unpleasant symptoms which are really a benefit and protection, fever, chill, cough, and loss of appetite might be named.

OUTDOOR LIFE IN WINTER.

By James H. Jackson, M.D.

THE summer and autumn outing seasons are over, and those who have been able to take vacations are again at home and at work. Once more they have settled down into routine work and the rut of everyday existence. I say rut, for this term signifies a deeply worn, narrow and often rugged track, which represents fairly the path of many a daily toiler.

The idea of a vacation is usually that of rest from work, change of scene, change of air, but the first question with many who are seeking rest or recreation or health is, Where is the most beneficial climate to be found ? The mountains, the tonic influence of the seashore, the ozonised air of the hill regions, with their wealth of vegetation, are each considered, but the decision as to location is largely determined by the chance for outdoor life and the quality of the air. More and more are the benefits of living in the open air coming to be appreciated by those who seek to recuperate exhausted energies, hence the numerous camping and cottage parties by lakes and forest streams, which are made up largely of business and professional people.

What is needed for the tired man who

has led a sedentary life, but who is not actually sick, is still more needed by invalids, and particularly by chronic invalids. Sunlight and oxygen in abundance, if rightly appropriated, are panaceas for many bodily ills. Men and women in good health cannot afford to neglect these most valuable means for maintaining health, and those who are sick would hasten their recovery in marked degree if they would in the most thorough manner avail themselves of the potencies of sunshine and fresh air in large and continued doses.

Both those who are sick and those who are well return, as a rule, from their summer outings to such indoor conditions that, without the most systematic and determined effort, they have little or no outdoor life for the remainder of the year. Vigour of all the bodily functions can be acquired and maintained only under the nutritive changes established by sunlight, oxygen and exercise. Those who are blest with health should arrange for the habitual employment of these great sanitary agents, which are as necessary to life as food itself. Indeed, if about half the food usually consumed by persons of sedentary habits should be omitted, and attention be given to proper aeration of the blood, associated with exercise, the general standard of health would soon be raised.

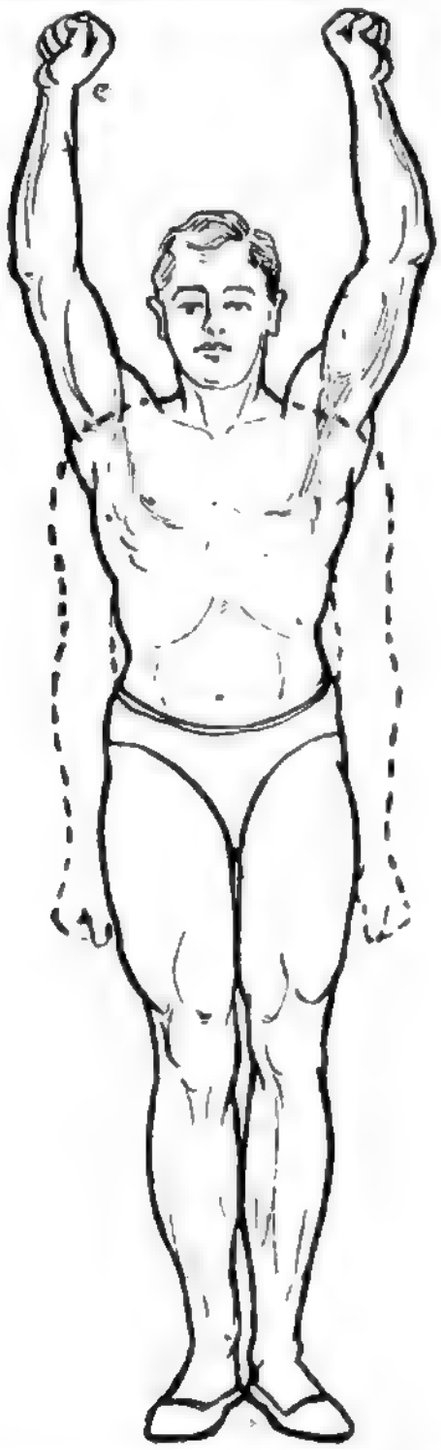
Although it may be pleasant to live always in a summer land, there are many disadvantages to be considered—for instance, the cost of long journeys, the occupancy of such hotels or boarding-houses as are provided in winter resorts, and—especially in case of the invalid—the separation from friends and home comforts, the unhygienic conditions, dietetic and otherwise, beside the danger of malarial poisoning, which in many places is by no means to be overlooked—all these conditions must be taken into account, and they make it very doubtful whether, except in cases demanding climatic changes for special diseases, it is best for the chronic invalid to seek health through change of climate. For purposes of recreation and pleasure simply there is no objection to such change, but sick people need more systematic care and better hygienic regulations than can be found at the majority of winter resorts.

The value of outdoor life for invalids in the summer is universally conceded, but in a northern climate there is little or no attempt to realise the advantages of such a life in winter. This is largely due to ignorance of the benefits to be derived from the bracing cold air and also to a lack of knowledge of how to profit by it without the risk of ill results.

With the coming of the cool autumn and winter weather the invalid should not allow himself to become unaccustomed to outdoor air. He should persist in getting out of doors daily, always adapting underclothing and outside wraps to the conditions of temperature. If he is in the habit of walking he should continue it. A mackintosh top coat and waterproof boots will protect him from dampness. If the air is cold and damp he should be especially careful to breathe (as indeed one always should) through the nostrils, with the mouth closed. The dress of women has in years past been a great drawback to the possibilities of outdoor life for them during the winter season. But now, thank heaven, they are at liberty to don short skirts, jersey, gaiters or trousers, and even top boots, for the sake of the health and pleasure-giving outdoor life, without being ostracised from society. In very cold weather it is well for them, and also for children to wear out of doors additional wool overdrawers or trousers so fashioned that they can readily be put on and off.

If the invalid is unable to walk, a carriage drive is a good substitute. The carriage can be partly closed to suit the necessities of the case, and in this way passive exercise and abundance of fresh air may be secured. If too feeble to walk or drive, or if for any reason these forms of open air exercise cannot be enjoyed, some sheltered spot can be found—a piazza, a tent, a shed, even the barn will do, where the invalid can sit or lie for an hour or two at a time. But it will be necessary to dress much more warmly than for walking, and the feet, legs and arms should be especially well protected. The shoes or boots should have one cork sole and an outer leather sole, unless thick felt or fur lined shoes are worn. These can be re-enforced by arctic overshoes.

For most chronic invalids the winter, with its fine bracing atmosphere, is the best season in which to seek and regain health. There is no reason for being afraid of cold weather in the majority of cases. There is health-giving and health-keeping virtue in it both for those who are sick and those who are well if they intelligently avail themselves of its tonic and upbuilding qualities.



SIMPLE MOVEMENT TO DEVELOP THE CHEST.

Exercise and Rest.

They are the Two Indispensable Conditions of Health.

THE circulation of the blood is best kept up by sufficient exercise in the open air. Those who by their calling are kept indoors, should at least take a few hours' walk every day. For the thorax is compressed by sitting and stooping at the various indoor occupations, some of the members and muscles are exerted beyond moderation, while others do not come into play at all.

This gives rise to most various abnormal conditions, such as curvatures, rheumatic troubles, oppression of the chest, anæmia, etc. A whole host of diseases is prevented by exercise in the open air after the close of business. For normal movements employ all the muscles and give tension to them, whilst the consequences of the exertion which single members had to undergo during the labour performed in the room, are equalised by the action extending to those which were not brought into action while at work. The amount of outdoor exercise must be regulated by the degree of unhealthiness attaching to the daily occupation, its one-sided and weakening influence upon the entire system, so as to produce everywhere equalisation. Without proper daily exercise the limbs will waste away, and, therefore, gymnastic exercises, even without appliances, should be indulged in during the hours of leisure, if circumstances permit.

REST.

In the same way as exercise is an indispensable condition for man, so also is rest necessary, if his humours are to course uniformly through the body, and no obstructions, troubles and paralysis to occur in one or other of his organs. Whether awake or at work, in fact, in all the functions where bodily or mental capacity is developed by man's volition, such an amount of strength and matter is drawn from the system, according to the increase of exertion and the length of time that fatigue, lassitude and languidness necessarily set in.

In a healthy man, strength is restored to him regularly after six to eight hours'

continuous sleep. It is only with patients and weakly persons that this is not the case, because with them not fatigue and lassitude, but lack of strength, is the operating cause. Sleep is most refreshing during the night, when darkness and repose around us least stimulate and challenge the human senses.

How long a man should sleep depends upon his age, the nature of his activity, and other conditions. Elderly people, as a rule, sleep least; children, notably infants, require most sleep.

For sleep to be refreshing, the bedrooms must be sufficiently ventilated, not only during the day, but also during the night.

The sunniest, largest, and most comfortable rooms should be set aside as sleeping apartments. Healthy bedrooms are a hundred times more important and necessary for the family than so-called "best rooms," into which nobody enters, perhaps, for days.

A sufficiently long, sound, undisturbed sleep makes man like a new-born being; therefore, the best possible arrangements should be made in this respect.

Sleeping on or under heavy feather beds must be strictly avoided.

An after dinner nap is of great importance, for the reason that the full circulation of blood is at the disposal of the stomach, thus assisting the essential process of digestion.

In every case where a person has undergone bodily or mental fatigue for any length of time, cessation from work, of shorter or longer duration, is like a refreshing sleep. The merchant, the man of letters, the official, etc., should therefore go out of doors into the fresh air, there to imbibe new vigour. Strengthening rest is an indispensable condition after any exertion whatever, and it is most conducive to health when no feeling of lassitude whatever is left behind.

THE POINT OF VIEW.

PHYSICIAN: "Your ailment lies in the larynx, thorax, and epiglottis."

HOOLIGAN: "Indade? An' me afther thinkin' th' trouble was in me throat."

ANTI-ALCOHOL CAMPAIGN.

THE Imperial Insurance Department of Berlin has taken a remarkable step in support of the anti-alcohol campaign. It has addressed an important circular to all employers who contribute towards the insurance of their workpeople against accident and invalidity, in which the evils of indulgence in alcohol are pointed out with striking force.

The main argument of the circular is to show that the use of alcohol by employees contributes in a most remarkable manner to increase the number of accidents, and to bring about premature invalidity. The Imperial Insurance Office recommends that workmen with drunken habits should either be excluded altogether from workshops or kept away from employment where there is any element of danger. Workmen should not be permitted to bring alcoholic beverages into their workshops, and employers should, above all, see that their works have adequate supplies of drinking water. Suitable and frequent advice should also be given by employers to their hands to abstain from drink.

The insurance department is willing to supply employers gratis with leaflets for distribution among their workpeople which deal with the evil effects of indulgence in strong drink on mental and physical health.

MICROBES.

Sing a song of microbes,
  Dainty little things,
Ears and eyes and horns and tails,
  Claws and fangs and stings.
Microbes in the carpet,
  Microbes in the wall,
Microbes in the vestibule,
  Microbes in the hall.
Microbes on my money,
  Microbes in my hair,
Microbes on my meat and bread,
  Microbes everywhere.
Microbes in the butter,
  Microbes in the cheese,
Microbes on the knives and forks,
  Microbes in the breeze.
Microbes in the whisky,
  Microbes in the beer,
Microbes in the milk and tea,
  Microbes by the year.
Microbes in the kitchen,
  Microbes in the bed,
Microbes on the brush and comb,
  Microbes in my head.
Microbes in the faucet,
  Microbes in the drains,
Microbes in my shoes and boots,
  Microbes in my brains.
Friends are little microbes,
  Enemies are big,
Life among the microbes is—
  Nothing *infra dig.*
Fussy little microbes,
  Billions at a birth,
Make our flesh and blood and bones,
  Keep us on the earth.

IN THE ARENA OF SPORT.

LEEDS' LUCK.

THE Test match between England and South Africa in Yorkshire next season will take place in Leeds.

ARSENAL EX-DIRECTOR'S DEATH.

TRAGICALLY sudden was the death of Mr. Brownlow William Perks, of Plumstead, who was for ten years a director of Woolwich Arsenal F.C. Mr. Perks went to call on Mr. Kelso, the club secretary, and after a few words' conversation near the gate with Gray, the well known full back, was seen to fall, and expired almost at once. At the inquest, it was stated that death was due to a heart stroke, and a verdict to this effect was returned.

COOPER AND THE 1000 MILES RECORD.

STARTED by Mr. D. K. Hall, of the Roads Records Association, C. G. Cooper, of the Hull Bicycle Club, left the General Post Office, London, on an attempt to beat the 1000 miles record standard of the Roads Records Association. Romford was reached at 9 a.m., and Chelmsford at 10.16 a.m., when the rider was 14 min. in front of schedule time.

At Colchester (52¾ miles) a slight delay took place owing to an unsuccessful attempt by a local photographer to obtain a photograph of Cooper, but, a crowd beginning to assemble, the rider departed without the picture being secured.

The first stop for refreshments was made at Ipswich 40 min. in front of the scheduled time.

At Saxmundham (90¾ miles) a puncture was sustained, and nearly all the gain upon schedule had been lost, the rider then being only 3 min. to the good. He, however, rode strongly, and left Yarmouth at 7 p.m. Cooper eventually completed the distance in four days, fifteen hours, fifty-five minutes, beating the Roads Records Association's standard by two hours five minutes. It was a very fine performance considering that in places strong head winds, heavy rains, and bad roads greatly handicapped the rider.

HIRST'S GREAT FEAT.

By dismissing five men at Scarborough Hirst accomplished the feat—unprecedented in first class cricket—of scoring 2000 runs and taking 200 wickets in one season.

At the beginning of the week he wanted 163 runs and sixteen wickets, and it seemed not unlikely that the Scarborough Festival would be well advanced before he gained his end. However, by scoring 111 and 117 not out, and taking eleven wickets against Somerset at Bath, he simplified matters in a way that he could not possibly have expected. Some records that we can recall have been secured by means quite inconsistent with strict cricket, but in Hirst's case everything has been fair and above board.

INTER-'VARSITY FOOTBALL.

THE Oxford and Cambridge Rugby Football match will be played at Queen's Club in December, and the Association contest in February.

NEW SWIMMING CHAMPION.

THE 200 yards breast stroke world's swimming championship resulted as follows: F. Naylor (Hornsey), 1; W. Rowe (Exeter), 2; Imre Vaezi (Budapest), 3. Time, 2 min. 58 2-5 sec. The water polo championship final between Weston and Polytechnic resulted in a victory for the former by six goals to four.

YORKSHIRE ENTERPRISE.

MUCH surprise has been created in Yorkshire football circles by the Dewsbury Club, whose officials are in negotiation for the services of W. J. Wallace, the crack New Zealand three-quarter and full back, whose dashing play created such a good impression last season. It is said that a sum has been offered, and the Dewsbury managers anticipate with some confidence that they will be able to "land the catch." If they do, it will be the biggest thing ever known in Northern Unionism. Wallace's answer is expected at any moment.

SOUTH AFRICAN VISITORS.

THE South African Rugby Football Team, which is going to tour Great Britain during the forthcoming football season, has sailed on board the intermediate steamer "Gascon" for Southampton. The following is a complete list of the players who have sailed from South Africa: A. Burmeister (Western Province), A. F. Marsburg (Griqualand West), J. A. Loulser (Western Province), A. C. Stegmann (Western Province), J. le Roux (Western Province), A. Morkel (Transvaal), J. D. Krige (Western Province), H. De Villiers (Western Province), S. C. de Melker (Griqualand West), J. G. Hirsch (Eastern Province), H. W. Carolin (Western Province), D. C. Jackson (Western Province), D. S. Marc (Transvaal), F. S. Dobbin (Griqualand West), P. Roos (Western Province), D. Brink (Western Province), P. le Roux (Western Province), H. Daneel (Western Province), A. F. Burdett (Western Province), J. W. E. Raaff (Griqualand West), W. Martheze (Griqualand West), H. G. Reid (Transvaal), D. F. T. Morkel (Transvaal), W. S. Morkel (Transvaal), W. Burger (Border), W. Neill (Border), D. Brooks (Border). Reserve: W. Miller (Western Province). Paul Roos has been elected captain, and Mr. Carden, of Port Elizabeth, has been selected for the post of manager. All the players were born in Cape Colony, except Neill, who is a Glaswegian.

THE EDITOR IN A CLASSIC POSE.

BEWARE OF UNDER-FEEDING.

The Danger of Extremes.

PROF. ALEXANDER HAIG, the well known dietary expert, has written to the medical fraternity of New York, warning Americans against the popular belief that the average man eats too much. He says that the increasing number of deaths from heart failure is largely due to underfeeding.

The notion that science is a more unerring guide than is Nature is constantly gaining ground. In the good old days men drank when they were thirsty and ate of whatever they wished until their hunger was satisfied. Now science condemns such foolishness as primitive. It prescribes one glass of water one hour before meals, and one glass one hour after meals—no more, no less. If you happen to be not thirsty at those times no matter, drink that amount anyway. If, perchance, you are thirsty and would like two glasses, you must not yield; it is only Nature that prompts you, and Nature is an unsafe guide. Or, you may be "abnormally" thirsty at meals; nevertheless, do not drink then.

As to our amount of food, we are directed to consume so many grams of the proteids, so many grams of the carbohydrates, and so many grams of fat, while we hear learned discourses upon large calories and the supreme importance of exactly maintaining our nitrogen balance—whatever that may mean.

I have purposely not mentioned the precise numbers of grams of the different food elements, for the simple reason that our eminent authorities have not yet agreed upon this important point. All give different figures.

Scientists, however, following the lead of Russell H. Chittenden, Ph.D., LL.D., D.Sc., have pretty well agreed that the average man eats twice more than he needs. If half his customary amount of food does not satisfy him it ought to, they say, and it will eventually, provided he keeps on suppressing his natural, and, therefore, unscientific instincts.

But just here lies a danger. It is true that one can accustom himself to a much smaller quantity of food than to which he has been habituated, and that eventually he will desire that smaller quantity and no more, but when he attains to this condition his digestive power will have been reduced by one half. As a result, he will lose from ten to thirty pounds in weight; that is to say, his muscles and organs will decrease by so much in bulk and strength. Now, if the heart decreases considerably in strength there will always be danger of its collapse, particularly if it be subjected to any extra strain, as when one runs for a car or rapidly up a flight of steps. Excitement alone may be fatal to a weak heart.

Rigorous dieting to reduce weight is always dangerous. A better plan is to work off the superfluous flesh by exercise.

Lack of sleep has a depressing effect on the heart; for during sleep cerebral circulation diminishes, when the blood can devote itself to the rest of the body.

Eating before going to bed, particularly if one is up late, is a good practice. it being most favourable to thorough body repair, that the blood at night be rich in nourishment.

Accustoming the digestive organs to a small amount of food results in a decline of appetite, whereas our object should be to increase appetite and thereby strengthen our digestive powers by judicious exercise in the open air or in a well ventilated room.

If the doctrine that a small appetite is preferable to a large appetite be true—and this is what "economy in nutrition" teaches—then open air exercise, which manifestly increases appetite, must be injurious to health. Or, why should we

exercise to increase appetite if we may eat only so much?

The notion is wholly absurd. The first sign of illness in a man or an animal is loss of appetite. And usually appetite is a measure of health.

To build up the heart and muscular system generally we must vigorously exercise the muscles.

It is not enough that one should stuff himself; it is all important that he should desire every morsel he eats, and this he will do only if he undergoes general physical and mental exercise. Food that is ingested, and even digested, will be absorbed only by those organs that need it—that have been exercised. This fact explains why many persons that are good "feeders" are yet inadequately nourished. If they are brain workers, and take no physical exercise, their brains absorb what nourishment they need; the rest is excreted.

Magnificent as are the results of brain work, we must bear in mind that there could be no result without the co-operation of the body, and that the body, in its turn, depends primarily on the integrity of its heart, lungs and stomach.

ADAPTABILITY OF SWIMMING.

OF all outdoor exercises swimming, from a health view point, stands pre-eminent. The various modes of swimming—on the stomach, on the back, and on either side—exert powerfully every muscle in the body; they also strongly exercise the lungs and heart, and, through them, all the other organs. This is the one athletic exercise that is general, and, furthermore, as it can be made light, medium, or heavy, according as one swims slowly, at moderate speed, or fast, it is a universal exercise that suits all strengths. Because each swimmer can thus suit his exertion to his strength, he may, by exerting himself a little more each day, finally increase his whole strength to a great degree through this one exercise. The like cannot be said of any other athletic sport. Wholly to appreciate the benefits of swimming, the added advantage of breathing large quantities of pure, dust free air needs to be only mentioned.

Without this being a full treatise on how to swim, a few hints to guide one in the art may be of value. First learn to kick properly. This is the *pons asinorum* of swimming. Not more than one out of ten swimmers kicks as he should. The nine bend their legs at the knee and kick the water back with their shins.

The would-be swimmer, supported by a belt or by the hand of some person, should lie flat on his stomach, with his legs drawn up and sprawled out like those of a broiled chicken. At the beginning of the stroke the feet are together; then, in making the stroke, the legs are kicked strongly back, the soles of the feet pushing squarely against the water; and, at the end of the stroke, the thighs are brought sharply together, the legs are more slowly drawn up, by bending at the hips and knees, for a second stroke, and so on.

The breast stroke with the arms is simple. The fingers should be closed, hands slightly hollowed and even with the chest. They are then thrust straight out horizontally, then turned forward so that the palms will oppose the water; the arms, kept straight, are now opened wide and thrust back until they are at right angles with the body, when they are brought into their first position ready for a second stroke.

The strokes of both pairs of limbs are simultaneous, that is, the hands start out from the chest, and the legs are drawn up for a kick, at the same time. The end of the kick should be simultaneous with the end of the arm stroke.

The kick, which I have said is the more important of the two movements, may be perfected by using a swimming board, or, better still, after the pupil can swim a little, by striving to swim on the stomach without using the hands. To do this trick one must kick properly, otherwise he will sink.

In swimming on the back, the legs are opened wide, drawn up, and then kicked out and slightly down, the soles of the feet and the under parts of the thighs opposing the water. It is important that the legs be closed forcibly at the end of the kick. At the same time that the legs are drawn up, the straight arms are lifted out of the water and thrown back, catching the water as a rower catches it with his oars; they are then, with the palms turned forward, brought swiftly in to the sides.

Ordinarily, swimming is, however, rather violent, so it should not be continued too long, particularly as cold water, at first stimulating, is afterwards depressing. No one should bathe longer than twenty minutes. A woollen bathing suit is the warmest. Greasing the body, as racers do, helps to retain the heat.

As an exercise for women, swimming is especially valuable, as being as graceful as it is enjoyable and healthful.

EXERCISES FOR FAT PEOPLE.

MANY methods of getting rid of fat are constantly practised, but there is only one sure and safe way to burn it up. And this can be done in only one way—by means of strenuous physical culture movements, especially devised for men and women burdened with superfluous flesh.

To put it succinctly, physical culture, if consistently persisted in, will restore any body afflicted with fat to good general health. It will do this by simply burning up the fat.

The first and most important thing in burning up fat is to avail one's self of plenty of fuel—oxygen This means deep and strong breathing at all times, and especially when performing the exercise.

To this end the exercise must be executed rapidly and without rest, and the patient must remember constantly to breathe more deeply and more strongly The fat man must never hold his breath, and the windows of the room in which the exercises are being taken must be kept wide open.

It is also highly important that the fat man (or woman) while exercising should wear much clothing—two suits of underclothes, a thick sweater, woollen socks and loose shoes, woollen gloves and a woollen shawl or heavy bath towel around the neck. All this covering absorbs the perspiration as soon as it exudes and keeps it from drying on the skin and hindering further sweating by choking up the pores. It also protects against sudden changes of temperature, which the fat man is not so able to withstand as his more normal brother, because his vitality is considerably lower.

In order to hasten the certain results of the exercise it is well to aid them by refraining from eating fat-producing foods, from eating more than a normal supply, and from sleeping as much as formerly. It is a well known fact that sleep is a staunch ally of fat.

Indulge in the exercises ten or fifteen minutes upon rising and before going to bed, and do not forget to execute them rapidly, and breathe continually, deeply and strongly.

Exercise 1.—Excellent for reducing the abdomen. This exercise also takes away superfluous flesh all along the back and the front part of the body, develops deep breathing, and in a very short while materially expands the chest.

As in all the exercises, first gain the correct standing position. Then, holding something heavy in the hands, spread the legs well apart, and shove the arms as far back between the legs as possible, at the same time bending the knees and bending the upper part of the body near the floor. When the arms are as far back as you can shove them, begin to rise, and as you do so inhale deeply and straighten the legs. Carry the arms above the head, lean backward as far as possible, bend the knees and throw the hips and stomach forward, inhaling all the while. When the lungs are full, begin to descend to the original position, and exhale at the same time.

Exercise 2.—Grasp the back of a light-weight chair in one hand and hold it at arm's length above the head. Keeping the chair continually in this position and eyes on it, kneel on one knee and then on the floor. Sit down sidewise on the floor, assisting with the disengaged hand if necessary.

Next lie down flat on your back. Keep this position for a moment and then rise to a standing position, inversely observing the method by which the floor was reached. It is well to use the hands alternately, and frequently do the exercise with both hands grasping the chair. This makes the exercise more severe, and should be employed only after it has been thoroughly mastered.

As this exercise brings the entire body into play, it strengthens the muscles generally, gives mobility and reduces fat wherever found, especially in the abdominal region. It does away with the drooping shoulders usually seen on fat men, and confers erect carriage of shoulders and head. The legs are also straightened and rendered more normal in proportion.

Exercise 3.—Get down on the knees, holding the upper portion of the body erect, as in the correct standing position. For the first movement, throw the hips forward and lean back that portion of the body above the hips, both as far as possible.

Be sure to throw the head back hard. Inhale while leaning back. Hold this position for a moment; then lean forward to the point of losing equilibrium. Exhale while leaning forward. To vary this part of the exercise sit on the heels and lean forward.

Besides strengthening all the body above the knees, this exercise reduces fat in the groin, takes away fat from around the lungs, heart and diaphragm, and, because the head is actively brought into play, is splendid for getting rid of fat necks and double chins.

Exercise 4.—Lie flat on the floor on the abdomen with arms folded under the chin and the tips of the toes touching the floor. Supporting the body on the tips of the toes and the arms and chest, raise the hips off the floor as far as possible, and then, while holding this position, raise up first one leg and then the other as high as possible. Be sure not to bend the legs in rising.

This exercise is severely felt in the middle of the back, the hips, the legs and feet, and fat is speedily reduced in these regions. As the movement gently affects the front of the body fat is also burned away there.

Exercise 5.—Stretch the legs comfortably apart, bend the knees, assume a sitting position as much as possible, then lean from side to side in line with the knees.

This seesawing of muscles burns up fat in the sides of the abdomen and prevents irregularities of digestion and assimilation.

READY FOR A PLUNGE.

SOME REASONS FOR A BLOODLESS DIET.

By Mrs. William Kingsley,
Vice-President of the Vegetarian Society, New York.

[*The statements made in the following article must not be taken as representing the editorial views, but are reproduced simply with the view of giving our readers the vegetarian point of view.*—THE EDITOR.]

1. COMPARATIVE ANATOMY.—The design of Nature in the proper food for mankind is made apparent by a study of comparative anatomy. Such eminent scientists as Linnaeus, Bell, Owen, Darwin, Huxley, and others, dividing the mammalia into four classes, carnivorous, herbivorous, omnivorous, and frugivorous, place man in the last division, by evidence of the following facts: the length and structure of the digestive apparatus, the swing of the jaw, and the formation of the teeth, bear the closest and most important resemblance to those of the anthropoid apes, whose food consists exclusively of fruit and nuts.

Du Chaillu, the explorer, doubting that the huge gorillas of Central Africa could attain their tremendous strength on such diet, dissected the bodies of a number, and in each case found nothing but vegetable food.

2. HYGIENE.—Conformity to this natural law is most essential to the health of mankind. Adapted solely to a vegetarian dietary, the over-strained liver, kidneys and general assimilative organs are unable properly to carry off so large a proportion of nitrogenous matter as is found in flesh foods, with the result that the system is clogged with uric acid and other poisons, which tend to promote gout, gravel, rheumatism, and inflammatory diseases of various kinds.

In addition to this, a close inspection of stock-yard and slaughter-house practices will convince any one that an alarming proportion of animals slaughtered for food are themselves diseased (one authority places the average as high as six out of every ten). The parasitic diseases of the hog—trichinosis and tapeworm—the tubercles in the lungs of sheep and cattle, with other diseases, some fifteen in all, and too horrid to specify, should at least frighten men and women to a wish for purer materials out of which to build wholesome blood and tissue. As a working basis for endurance against "spurt," compare the lion with the elephant or camel, the tiger with the horse. All our work is done by animals nourished on vegetable food; our manual labour, the world over, by men who eat the least meat. The athletes of Greece were trained on a Pythagorean diet; and, at the present day, the long distance walking matches held recently in Germany, and a majority of the bicycling contests in England and America, have been won by vegetarians.

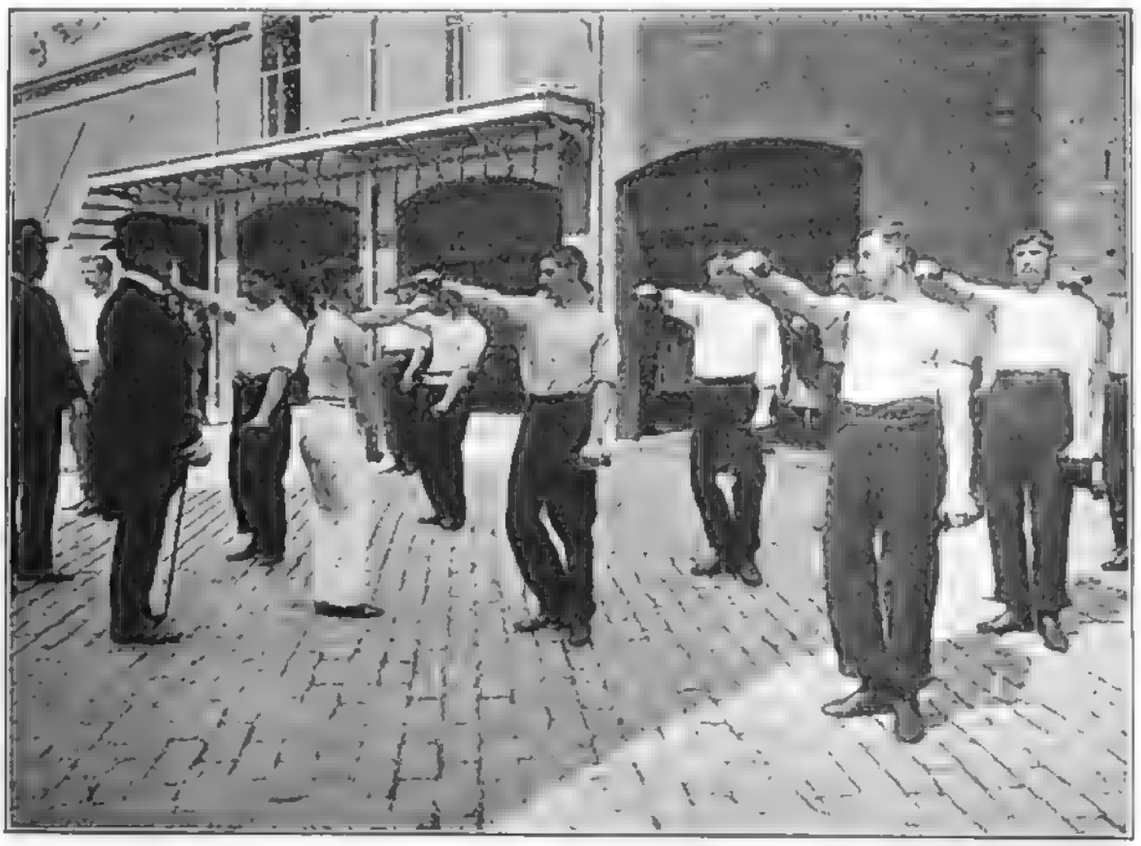
3. CHEMISTRY.—The chemist finds that all the eighteen elements necessary to health, strength and endurance are found in a bloodless diet. After close analysis, pure animal and vegetable albumen are shown to be identical; flesh foods contain nothing that is not also present in a diet of fruits, nuts, cereals, pulse, etc., while they are absolutely lacking in the valuable carbo-hydrates—starch and sugar—which as heat and flesh producers, are indispensable to the physical economy. Much stress is laid upon the nitrogenous material in flesh food, but other foods contain this element much in excess of the best beef, in the following order of value: Cheese, peas and beans, peanuts, wheat, chocolate and eggs.

4. ECONOMY.—In addition, a mixed dietary is from three to four times as expensive. Flesh contains from one-half to three-fourths its weight in water, while beans contain only 14 per cent. Most housekeepers will be surprised to learn that a single dollar spent in whole wheat flour will yield as much nutriment as thirty dollars spent on sirloin of beef. A vegetarian table may be made costly by the addition of fruits and vegetables out of season, but it has been frequently

demonstrated that, by taking thought, this most economical diet may contain everything necessary to perfect health and strength.

5. RELIGION.—In the light of the above facts, is there any longer a reason or excuse for the continuance of a practice inherited from a barbaric ancestry? Men and women of imagination are shocked by the degrading sight of bloody, mangled bodies exposed everywhere for sale; and at the thought of the many cruelties which inevitably surround the breeding, transportation and slaughter of millions of highly sentient and intelligent animals. Luminous mental faculties and pure morals are greatly augmented by a plain diet, as has been proven by philosophers, poets, scientists, saints and religious teachers since earliest times. Among these are the illustrious names of Clement of Alexandria, Tertullian, Porphyry, St. Chrysostom, St. Francis d'Assisi, Buddha, Pythagoras, Plato, Seneca, Plutarch, Milton, Pope, Shelley, Byron, Rousseau, Voltaire, Isaac Newton, Benjamin Franklin, Swedenborg, Lamartine, Edwin Arnold, Tolstoi, and many others.

Beauty and refinement plead for a higher basis of living; temperance and chastity demand it. Through individuals the body politic outgrows the evils that beset wealthy nations—war, intemperance and vice—and adopts the saving virtues of peace, purity and philanthropy.



THE EDITOR GIVING INSTRUCTION IN PHYSICAL DRILL.

The principle of vegetarianism has its rise in the highest sentiments of the soul, and is the practical application of the best tenets of every phase of religion—the universal fatherhood of God, "Whose tender mercies are over all His works," and the brotherhood of man. Chicago police officials testify that the most shocking crimes in that city within recent years

have been committed by the employés of the slaughter-house, recognised by a peculiar twist of the knife necessary in butchering animals. We have used this brother's hand, and degraded him; and in order that a perverted appetite may be satisfied, is he not a social outcast, shut off from every refining and ennobling influence? Through his revolting work of cruelty and slaughter will he not become so oblivious to the sacredness of life in lower forms, that he will fail to realise its Divine possibilities in his fellowmen and in himself? May "the might of gentleness" soon conquer this life-long habit of thoughtless selfishness, making it the "stepping stone to higher things"—the gateway to a daily living void of offence toward man and every living creature!

Habits of Diseases.

The Importance of Change in Therapeutics.

JOHN FOSTER once said that "For the great majority of things habit is a greater plague than ever afflicted Egypt; in religious character it is eminently a felicity. The devout man exults to feel that in aid of the simple force of the Divine principle within him there has grown by time an accessional power, which has almost taken the place of his will, and holds a firm though a quiet domination through the general action of the mind. He feels this confirmed habit as the grasp of the hand of God which will never let him go."

A writer in *Health* says it has been maintained that thoughts, feelings and actions leave behind them residue that modify the nerve centres, causing the cells to acquire a morbid nature, and thus in the exercise of their function foreordain to a great extent what we shall feel, think and do; and as moral manifestations throughout life work corresponding physical changes, it becomes evident that a steadily acting pathological element in the physical may also produce changes upon the nerve elements of the mind.

When the brain is exercised regularly in a given manner it is apt to acquire, even during health, a strong habit of action; and when a disorder is produced by an independent cause the habit will help to overcome or aggravate its effects.

It is a well known fact that many disorders have a tendency more or less to periodicity, disappearing and re-appearing at regular intervals, and it becomes important that this fact be taken into account in the treatment of such disorders in order that treatment may overcome the morbid habit. Thus in a case of ague the intermittency of symptoms calls for more or less modification in the treatment on every second, third or fourth day, and there is a certain revolution every seventh day which must necessarily be taken into account in order to fortify the patient and break the habit.

Derangements of the nervous system, more frequently than any other, have a tendency to their regular cycles, which mark themselves daily, monthly or yearly. The supposition has been that there is a vague connection between dementia and the phases of the moon; hence the word lunatic as applied to a certain form of madness.

Epileptics are known not to have convulsions for months, but may be attacked on the anniversary of their last paroxysm, and with such the cases must be watched at such times and their treatment renewed in order to insure a successful cure.

The cycles of disease may not at all times be entirely pathological, owing to the definite variations noted in the healthy body, or subject to the changes with the seasons of the year, time of day, etc. The most important are those which occur within a single day or night.

We may divide the day or twenty-four hours into five periods, and each period may be characterised by some special condition of the system, or susceptibility of the system, with intervals partaking more or less of the nature of the preceding or succeeding period.

First.—From four o'clock a.m. to 8 o'clock a.m. In health during this period the temperature falls about one degree.

At this time, owing to a corresponding decrease in the consumption of oxygen, the vitality in general is at its lowest.

The first night sweats of phthisis appear at this time, and there is a greater susceptibility to depressing diseases, such as yellow fever, cholera and diarrhœa, than at any other hour.

Second.—From 8 o'clock a.m. to 10

o'clock a.m. Both in health and disease this is the period of the highest vitality. Fevers now decline more or less perceptibly, the nervous system is calmest, pain most modified, and the patient most rational. This is the time to feed the patient, but there is no special need of stimulants at this period. Many asthmatic patients can eat very well in the forenoon, whereas taking food in the afternoon would be almost sure to provoke a paroxysm.

Third.—From 3 o'clock to 6 o'clock p.m. During this period fever reaches its maximum, the highest point being attained by four. Inflammatory excitement and nervous irritability are also at their height. And in phthisis the hectic now begins, when antipyretic baths or packs are used. This should be observed at the first part of this period, or just before it, between 2 and 3 o'clock. Tepid sponging and inunctions of the skin should also be practised at this time, when there is most need for their soothing effect.

Fourth.—From 10 p.m. to 12 p.m. In health this is about the time for dropping to sleep, and as it is just in the interval between waking and sleeping that the wandering of the mind is more likely to occur in health, it is to be expected that in disease delirium will first appear and be generally worse at about this time. Measures for the relief and prevention of this symptom, as the administration of an hypnotic, should be resorted to an hour or so in advance (between 8 and 9 o'clock). The convulsions of epilepsy are more likely to appear at this period, therefore the proper remedies to fortify the patient against such attack should be resorted to just before the patient retires.

Fifth.—From 12 to 2 a.m. This is the period of profound slumber in health, since the vital forces are more on the ebb, and gland secretion is diminished. This is the most common time for attacks of disease due to blood poisoning, such as paroxysms of gout, uræmia, Bright's disease and the vasomotor derangement dependent on anæmia which often gives rise to apoplexy.

It is during this period that nightmare and dyspnœa from cardiac disease is most likely to occur, the respirations during sleep being deep and laboured. Weak persons are very apt to become much exhausted during this time and toward morning, as may be seen in phthisis and other depressing diseases where the patient breaks out in profuse colliquative sweats at about this time.

This may be prevented in most instances by waking the patient at about midnight and administering a little food with some appropriate stimulant. Aside from the various forms of periodicity to which reference has been made, many chronic diseases are likely to become in part mere perpetuations of some acute process out of which the chronic one has grown—the latter persisting even after the original cause has ceased to act. A good example of this is seen in the chronic ague, which persons who have lived in a malarial locality find it so difficult to get rid of, even after they have continued for months in a pure, healthy climate.

In such cases mere exposure to cold and other depressing influences is followed by characteristic chills, differing in no respect from those which depended directly upon true malarial poisoning. Those cases can be explained only upon the principles of habit. The same may be said of many nervous disorders, but more particularly insanity, of which a large majority of cases are due to deranged mental habits.

In one class of cases it is the imagination that has been so indulged that it has at last broken loose from reason and will, and is developed into one of the many forms of garrulous hallucinations.

In another class of cases the mind has been dwelling entirely upon one subject or train of thought for a long time, and from absent-mindedness has passed to a morose, taciturn and unmanageable state —becomes a monomaniac.

The physician should make it his first and chief object to break up all old and injurious habits of mind which the patient may have contracted. He should insist on a change; all the old trains of thought must be broken up, the mind must be constantly diverted by new impressions from without, suggesting new ideas, driving out the old ones by means of involuntary displacement of those old ideas through change of scene and surroundings.

Persons suffering from almost any form of chronic disease will derive more or less

benefit from change, and it will not make much difference so long as it is a change, whether from city to country, or *vice versâ*, attention to atmospheric conditions being necessary in pulmonary and cardiac complaints.

Whooping cough is a specific disease which runs its course in three weeks, but the spasmodic paroxysms persist for weeks or even months after the system is rid of the morbific virus. When this is the case the best plan is to give the patient a change, a few weeks away from home being sufficient to perfect a cure. In all these cases it is not a change of air nor any other one thing, but change of habit whose effects we secure.

Sleeplessness and loss of appetite will often yield entirely and rapidly to change of surroundings when all other means have failed.

The effects of habit are also seen in their therapeutic measures. Every remedial agent ceases to have its therapeutic effect on the system if used continuously for a period of time, the length of which will differ in different instances.

The Chief Cause of Winter Diseases.

By J. H. Kellogg, M.D.

ALMOST all winter maladies and respiratory disorders may be attributed primarily to taking cold. Consumption, pneumonia bronchitis, pleurisy, often begin in this way. A child has the croup—it was a cold that started it. Diphtheria never comes without it. The throat must be congested or sore from a cold, a continued irritation so that the cells have lost the power to defend themselves, before diphtheria can obtain a foothold. The winter cough is simply a bronchial catarrh that is awakened by the first cold. If one were able to meet cold weather without taking cold, there would be no cough.

A cold, then, is a matter of very great significance. If we can protect ourselves from taking cold, we shall usually be able to escape the disorders common in winter.

Colds, however, are not ordinarily looked upon as serious. Many people say that they are "just as well as usual," only they "have a little cold"; they will be "all over it in a few days." But the chances are that they will never be all over it. One cold leaves a susceptibility to others, a tendency to disease, that it is almost impossible to get rid of.

The perfectly healthy person, the man who is in prime condition, never takes cold. Did you ever hear of Corbett or Fitzsimmons taking cold just before he went into a fight? When a man is in the "pink" of condition to go into a pugilistic or any other encounter, there is not the slightest danger of this misfortune. Hence, the first thing to do to protect one's self is to become well and healthy, to get the skin into a perfectly healthy condition. Then it will be able to take care of itself, and to act as a defence against disease

There is a variety of ways in which a cold may be brought on. A little knife-blade of air blowing in through a crack in a window, upon some part of the body, will chill that part, and the blood vessels of that region will become contracted, affecting, somewhere in the interior of the body, an area in reflex relation with this portion of the surface of the body. For instance, the blood vessels of the skin of the top of the shoulders and the chest are associated with the blood vessels of the lungs, so that whatever happens to the blood vessels of the skin of the shoulders and chest happens also to the blood vessels of the lungs. If there is a contraction of the blood vessels of the back of the neck, there will be a contraction of the blood vessels of the nose and throat, and if there is a contraction of the blood vessels of the top of the shoulders and the shoulder blades, there will also be a contraction of the blood vessels of the lungs.

When the influence of the cold is continued, this contraction is followed by congestion. When one puts his hands into cold water for a few minutes, they are first pale, and then red. This is reaction. The longer the application and the more intense the degree of cold, the greater will be the contraction and the

congestion. So if the back of the neck is exposed for a long time to the influence of cold, one is likely to have a cold in the nose and throat; if the shoulder blades and the tops of the shoulders are exposed one is likely to take cold in the lungs, and suffer from congestion of the lungs. If the cold is long continued, it may cause not only a congestion, but an inflammation of the nose or the lungs. So, if the bottoms of the feet become wet or chilled, a weakness of the bladder may result if there has ever been a trouble there; or a weakness of the stomach, if there has been a catarrh of that organ.

In order, then, to avoid the diseases of winter, and to secure for one's self a constant protection against changes in the weather, it is necessary to cultivate a healthy skin. One must keep himself physically strong by obeying the laws of health. When people die of pneumonia in winter, it is because their lungs have lost the power to resist disease; their general vital resistance is gone; their lungs become congested from a little exposure because the skin is inactive, germs find a foothold and develop in the lungs, the lungs fill up with exudate, and they no longer have lung capacity enough to keep them breathing.

Pneumonia and all these winter diseases may best be avoided by maintaining perfect activity of the skin. The man accustomed to taking a cold bath every day of his life need not fear pneumonia. The child who has a daily cold bath will not be susceptible to tonsilitis, diphtheria, croup, or capillary bronchitis, for he is protected by this gymnastics of the skin from those maladies which come from internal congestions.

One of the most important precautions to observe in winter is not to overclothe the body. The clothing should not be so heavy as to cause the skin to perspire. Many people smother themselves with woollen clothing. The writer has become convinced that it is not best to wear woollen clothing next to the body. It is only people so extremely feeble that they ought to be kept in an incubator, in order to be safe from the hardship of cold, who need to wear woollens next to the skin.

The peculiarity of wool is that it absorbs a large quantity of water before it appears to be wet. Wool is highly hydroscopic, as the physicists would call it; on the other hand, linen becomes wet and shows it as soon as water comes in contact with it. A woollen cloth or garment, upon being dipped quickly into a pail of water and removed, will not appear to be even moistened, whereas a linen garment will be wet through instantly. Linen has not the hydroscopic property of wool. The latter is also irritating to the skin, while linen is not.

The practical difference in wearing these fabrics is this: Linen next to the skin takes up moisture quickly, passes it on quickly, and it is gone. But a woollen garment takes up perspiration slowly, and passes it on slowly, the consequence being that there is always a large quantity of moisture next the skin; the skin itself is saturated with moisture, and heat is given off with great facility. This is a very important point. Dr. Hurtz, an eminent scientist of Vienna, has made extensive experiments with reference to the rate at which the skin gives off heat, and he finds that it does so almost twice as rapidly when moist as when dry, the reason for this being that the heat must be conducted to the surface before it can be given up. A dry skin is a poor conductor, but a moist skin is a good one. Heat is readily given off by both conduction and radiation when the skin is moist. Moisten the finger and pass it through the air; the finger cools quickly. By this means one can tell in which direction the wind is blowing. Wet the entire finger, and hold it up in the air; the wind causes evaporation to take place, and this cools that side of the finger. So it is with the whole body. When the entire surface is moist or damp, the heat is being thrown off with great rapidity, and one is likely to be chilled. With woollen underwear the moisture of the skin is retained for a long time, and since the heat is being constantly and rapidly brought to the surface and thrown off in this way, the surface of the skin becomes chilled, and the person is far more likely to take cold than if he wore linen, for the linen takes up the moisture and transmits it to the

outer air, drying at once. Therefore I am becoming more and more satisfied that linen clothing is better suited for every season of the year and for all persons, with the exception of those who are very feeble. This is not a new idea, for Priessnitz, that remarkable genius who proposed the use of cold water in the early days, also made this discovery with reference to the clothing.

Nature requires us all to pay a tax for wearing clothes, and this tax we have to work out in cold baths every morning in order to make our skins healthy and vigorous—to give them the same quality which the Indian's skin has; we must antagonise the enervating influence of dress by the habit of daily cold bathing.

It is of particular importance to avoid overclothing the neck, for it is in the throat and lungs that colds are most frequently contracted, because these parts of the body are more used than any other. On going out of doors it is very common to wrap a thick woollen or fur muffler about the neck, thus producing perspiration; when one comes indoors and takes off this muffler, the neck is cooled, a chill follows, the blood is congested, and inflammation results, causing nasal or pharyngeal catarrh.

Another frequent cause of colds is the wearing of rubbers, which, being impervious to moisture, retain perspiration, so that the feet are soon moist. When the rubbers are removed, the evaporation through the leather of the shoe and the cooling off process give the feet a chill, and one takes cold just as surely as if he had gone out of doors without his rubbers and got his feet wet. In this case the thing to be done to avoid a cold is to take off the shoes and stockings, and put on fresh, dry ones.

One of the most common and unsuspected ways of taking cold is the habit of wearing rubber waterproofs, or mackintoshes; these, being put on over the clothing, retain all the moisture excreted from the body, and prevent its evaporation; when the waterproof is removed, this moisture evaporates very rapidly, and one is chilled even in his own home, where he feels perfectly safe.

Too much bed clothing is a great cause of taking cold during the night, and, furthermore, leaves a susceptibility to taking cold during the day. A heap of blankets on the bed, almost smothering one, is a great mistake, for the bed absorbs the moisture thrown off by the body. Now, if one throws off but an ounce of water in an hour, in eight hours he has thrown off half a pound, and this has been absorbed by the bedding. Suppose that the bed is in a cold room, and the water has not evaporated; the bed clothing does not dry, and at night the bedclothes feel a little damp. Day after day more and more moisture collects in the bed, until, after a few weeks of cold weather, there may be several pounds of water in the bed. The spare bed in a cold bedroom is always damp, for the house is a distillery; in the kitchen the kettles are boiling, in the laundry the clothes are boiling, and the steam keeps diffusing through the house until it finds some part that is cold, and there it condenses. This moisture finds its way to the spare bed-room, where there is no fire, to the parlours and the reception-room if they are not heated every day, and there it accumulates. When spring comes, these rooms begin to have a musty smell, and mould can be seen upon the walls.

It is evident that a person going to sleep in such a room is in danger of being chilled, because he has not only to warm the bed, but he must also dry it out by the warmth of his body, and that operation takes a great deal of warmth away from his person, so that he awakes in the morning tired out and exhausted, for it has taken all his energy and heat to warm up that bed. There is death in the spare bed. One might almost as well stand up before a bullet as to sleep in a damp spare bed. Many a person has taken his death cold, contracted pleurisy, rheumatism, sciatica, or some other distressing ailment, by just one night spent in such a bed.

Another necessary precaution against colds in particular and disease in general is to live in a cool atmosphere, out of doors as far as possible. We must not only bathe in cold water and accustom ourselves to light clothing, both in the daytime and at night, but we must accustom ourselves to cold air.

If we could train ourselves to living in rooms at a temperature of sixty degrees, we should not be threatened with colds; but most people have the temperature of their houses nearer ninety degrees in winter. If these same people happen to be out in the open air in the summer, when the thermometer is standing at ninety degrees, they exclaim, "How terribly hot!"

The winter season ought to be the most healthful time of the year. In the summer we cannot control the weather, but in the winter we can, to a degree, indoors, at any rate. The best temperature is from sixty to seventy degrees. Sixty-five degrees is about the maximum. Children have rosy cheeks when the thermometer stands at sixty-five degrees, but when the temperature rises above seventy degrees they become languid. About sixteen years ago, in a hospital for consumptives, I found that the temperature was maintained at from fifty-two to sixty degrees. It was never allowed to rise above sixty degrees, and was more often at fifty-two degrees.

These winter diseases are not so formidable if properly managed. The rational principle which underlies all treatment is to keep the skin active—not so active as to induce perspiration and bring on a chill, but normally active, and able spontaneously to resist the inevitable exposure of cold weather.

ARE WE REALLY GOOD SPORTSMEN?

Foreign Critic on Our Games.

[*In a recent issue of the* REFEREE, *a German critic has been attacking us with the old cry that we Englishmen prefer paying to watch others play than to play ourselves. The writer of "Sporting Notions" in the same paper makes a sensible and effective reply. Appended are both reply and attack, with a selection of letters from correspondents.*—THE EDITOR].

SIR,—Now that, happily, a *rapprochment* has at last taken place between our respective countries, allow me to contribute my own share of friendly feeling to the new *entente cordiale* (excuse so many French words) by pointing out to you something that is seriously wrong in your national life such as I have observed it during a stay of two years in your interesting and instructive country.

How is it that, now that sport is more of a fetich with you than ever, there should be so much talk of physical degeneration among your countrymen? Being a straightforward man, I will tell you at once that sport is not exercise when it is indulged in by proxy. I can't see how it helps you to build up your constitution if you stand with your hands in your pockets watching other people do things which you yourself would very much like to do but can't. It is a commonplace among historians that the decline of Rome was due to a great extent to its absorbing passion for gladiatorial shows. And Spain has not particularly improved her position in the concert of Europe by making a fine art of disembowelled horses and slaughtered bulls. Well, your arena is the Oval and Lord's, and more occasionally the Crystal Palace. True, the ground does not get soaked in blood, but neither is there any appreciable effect produced in the circulation of the spectators. What it comes to, as far as I can see, is that a great many of you pay so that a few of you may play.

I have heard you, in speaking of the good old days, make much of an institution called the village green. I have travelled extensively through England, trying to elope—is that the word?—with your trade to my own country, but nowhere have I seen any village green in active use. Have they been abolished by Act of Parliament? You pass such funny Acts of Parliament. However that may be, the country people have at least the fresh country air to put a little vim into them. But your towns, sweltering, mephitic in the summer, slushy hotbeds of influenza in the winter, what chance do they give a man of stringing his slack muscles a little tighter? Strap-hanging his way home, he scans his halfpenny paper, sees that Jones has made what you call a century, or Brown has scored a goal, and puffing out his thirty-two inch chest he exclaims, "What devils we English are for sport!" He forgets that, so far as that making him a sportsman, he might as well be studying the latest scratchings at Chantilly or the stock and share quotations of the Continental Bourse.

No, my friend, if I may presume to call you so, I am not surprised that your birth-rate is decreasing, and that, not having enough taxpayers, you must cut down your Army estimates. What are you doing to train your generations into specimens of vigorous masculinity? You have your public schools, on the playgrounds of which, it has been said, your Waterloos were fought. Oh, what a fallacy! The battles you have won are the splendid legacy of beef and bone left you by your yeoman ancestors. But that is about used up, and you have no reserve fund. So will you take my tip? Put your

cricket and football on the shelf and your professionals on the Civil List. You will find it cheaper in the long run. And then go in for a more universal system of exercise. Go in for athletics in which any number of people can play on each side and which do not depend on the vagaries of the weather. Don't go in for tricks—leave those to the acrobats in the music halls. I have never found out how your young men amuse themselves in the evening, but you will find the majority of our striplings, except those that are in barracks, in the local gymnasium training for the next athletic tournament. Why not make the gymnasium with you a national institution as we have done? I say this unto you: Build ye temples to Castor and Pollux and worship therein devoutly. Don't make sport a fashion, a speciality of the season. Your cricketer rusts for seven months in the winter, your footballer for four months in the summer. Down in Wales you have great musical meetings. That is sheer waste of time. You may sing till you burst, you will never produce a Tamagno or a Caruso. But why not adapt the idea and have gymnastic Eisteddfods? The only thing of that sort you have at present are your inter-'Varsity sports. Establish country contests; have your Athletic Cup finals; make it the dream of every English schoolboy to be a gymnastic International; and, above all, avoid the blight of professionalism.

I would like to write more, but I have just had a wire to ship three thousand cases of cutlery to Sheffield. So business before sport.

I am, Sir, yours, etc.,
A FRIENDLY GERMAN.

Charlottenburg.

———

We are, of course, accustomed to be attacked and criticised by foreigners such as "A Friendly German," whose letter was published last week, and equally of course, if not more so, we resent it. There are times when these foreign observers and censors particularly get our backs up, and that is when they are uncomfortably near to the truth. Almost the only remaining outrage they can commit is to express themselves neatly, with a touch of humour and a suggestion of satire; and in all these respects "A Friendly German" is an arch offender. Of course, he goes too far, as satirists are apt to do; now and then he hits the nail on the head, and he more often misses it, as several of our correspondents show. The "Friendly" one does not, for instance, believe in "the institution called the village green." He has never seen the coming county colt playing cricket there; but let me assure him that the village green exists in various districts. I chance to know, because the last ball I didn't happen to catch was hit in a village game. We had a crack bowler in disguise—that is to say, his identity was not suspected by the yokels; and how we *did* chuckle when we thought what a surprise we had in store, what havoc he would play with the local wickets. The innocent rustics had never seen or dreamed of the sort of bowling we were going to produce for their everlasting enlightenment. Our bowler was absolutely self-possessed, too; he did not give it away by the vestige of a smile. And his first ball was a beauty; I think it would probably have got Hayward. Perfect length, it broke off and came in as if the middle stump was a magnet; and the carpenter's apprentice smote it to the margin of a far distant horse pond. It was not in the least bit cricket; he ought not for a moment to have contemplated such an outrage; but that is what took place. He ran, and grinned, and his debased companions applauded in the vulgarest manner. What *can* you expect from a creature who has a pad tied on to a green trouser leg by a bit of rope? The very next ball would have been his last if I had only held it instead of—I can feel it now, and wish I couldn't—catching it just on the end of the middle finger, which I thought for a moment had been driven out of my elbow or shoulder joint. But at least do not let any foreigner try to persuade me that there is no cricket on the village green. I am in a position to correct any such impression.

I have diverged from "A Friendly German," who really does go too far in his diatribes. "Your cricketer rusts for seven months in the winter, your footballer for four months in the summer," he says; but it is not the fact that the cricketer necessarily does nothing in the way of athletics from October to April, or the footballer from May to August. Our critic is just a trifle off, too, when he writes: "Don't go in for tricks; leave those to the acrobats of the music halls . . . Why not make the gymnasium with you a national institution as we have done?" But it is in the gymnasium that we see more or less clumsily attempted the tricks which music hall acrobats perform so neatly. Has our "Friendly German" ever been to the Military Tournament? Has he ever been on board one of half a

dozen men-o'-war that I could name—and I suppose the same thing holds good with the rest? Does he think that the copious advertisements of Sandow and other athletic instructors are paid for by casual philanthropists? I write this, as it happens, in a club in a street off Piccadilly—Dover Street and the Bath Club to wit—and as I dip my pen I hear the plunge of members into the water; over the surface I see rings and a trapeze; there is a "horse" for gymnastic purposes by the side of the bath; a ball to be punched; foils and boxing gloves are handy. Our Teutonic friend does not mention tennis, lawn tennis, racquets, "squash," fives, and other games which to play well certainly require what may be called gymnastic energy; nor is he apparently conscious of athletic sports apart from the 'Varsities and rowing.

DEVELOPMENT OF ARMS AND SHOULDERS.

To go all the way, or nearly all the way, with our "Friendly German" is impossible, but where he has us on the hip is in his little sketch of the strap-hanger on his way home, reading his halfpenny paper—no bad judge if he gets a white 6.30 edition of the *Evening News*—noting that Jones has made a "century" and exclaiming, "What devils we English are for sport!" There is no worse abused term in the language than the honourable name of sportsman. It implies skill, humanity, knowledge, experience, pluck, generosity, and other admirable attributes; but it is habitually applied to men who do not know what it means, and who would, indeed, often be inclined to consider a sportsman a fool. Mr. Blank has made money by a lucky deal in the City and buys some racehorses. He has never sat in a saddle; and as for his string, he cannot learn to distinguish one from another further than to know that the chestnut mare with three white legs is not the bay colt with black points. Needless to say, *he* has not chosen the animals. His trainer had picked two or three at a coming sale, and was instructed to buy them. He does so, takes them home; Mr. Blank goes in due course to see them tried, is hopelessly confused by the whole business, but is told that he had better run one of them next week and back it. The animal runs and wins; he is naturally delighted, his satisfaction being hugely increased when he reads next morning that "It was pleasing to see in the van the colours of so good a sportsman as Mr. Blank, especially as having summed up the situation with characteristic astuteness, and wisely disregarded the fairy tales that were current about the Fly-by-Night filly, he betted fearlessly. This is pleasant encouragement for a keen follower of the great game whose colours we have no doubt are destined to enjoy wide popularity." Mr. Blank spun a top when he was a little boy; once he was induced to try and pat a ball over a net in the suburbs, and he has twice endeavoured to play golf. This has been all his experience of sport, but he has written a cheque to pay for some horses, and so he immediately becomes a "sportsman" with one or more eulogistic adjectives.

There is no doubt that the lounger at Lord's or elsewhere who looks on at a cricket match, or the attendant at a cup-tie in the football season, does frequently imagine that the fact of his being there constitutes him a bit of a sportsman—and a good big bit, too. If Middlesex

are playing Yorkshire, he says "we" when he speaks of the eleven; but it would be decidedly unfair to sneer at lookers-on as a body. Many of them are keen cricketers who watch with rooted attention, bent on seeing how things are done by the big players, eager to pick up hints which they will put into practice at the earliest opportunity. They can't hope to play at Lord's, but they never miss a chance of playing for their own little club, and their observation of the game will afford them material for eulogistic, or, it may be, critical conversation for weeks to come if they are seeing a notable match. Besides, we are not all "W.G.'s," who play with our sixtieth year looming close at hand. Soon after thirty, or let us say several years prior to forty, most men lose much of the suppleness which is essential to good fielding; they love the game, but no longer shine at it, and are spectators perforce. They *do* love it, many of them. I have written before of the extraordinary knowledge shown by the men, and sometimes women, who make the ring at Lord's and the Oval, of what the players have done in this and previous seasons; and their comments and criticisms prove beyond doubt that they thoroughly understand every detail of what goes on. But I agree with our "Friendly German" that merely looking on at a sport does not necessarily make a sportsman.

Other correspondents who have jumped into the breach send the following interesting letters:—

SIR,—"A Friendly German" is evidently not so profound a student of our national life as he fondly imagines himself to be. Nor are his deductions from what he has "observed" of the sporting side of us during his "stay of two years" of much value when they are examined with a little more care than he has extended to his facts.

To hastily assume that the crowds which assemble to watch the matches between our premier cricket clubs are composed of men and youths who "stand with hands in pockets watching other people do the things which" they "would very much like to do but can't," is to argue from premises demonstrably false; and to draw a comparison between a Roman gladiatorial show and a modern cricket match is getting too near the ludicrous, and makes one take the whole letter in the sense of his last paragraph in which he says he is shipping "three thousand cases of cutlery to Sheffield."

How does our friendly critic account for the enthusiasm of such crowds? Has he never observed how keenly every good point is watched and how unstinted is the applause given to the players for clever work?

Theory alone never engendered enthusiasm such as this. How, then, was the practical knowledge gained? These people "who stand with hands in pockets," etc., are certainly not playing while they are watching; but what ground has "A Friendly German" for stating that they are watching what they "would very much like to do but can't"?

Let him turn to the next page to that on which his letter appears in yesterday's *Referee*, and under the heading "The Playing Fields" he will find the results of some two hundred and fifty cricket matches played by the youths and manhood of London on Saturday last. This does not profess to be a complete return, and, indeed, does not represent one-tenth of the matches played in and around London on that day, but it will serve to "point a moral."

These two hundred and fifty matches employed five hundred clubs, and the membership of each of these clubs I will put at twenty—an absurdly low estimate. Here are ten thousand cricketers learning and practising the game, the giants of which they are so ready to applaud when they "stand with their hands in their pockets," etc. Multiply this number by ten, and you have then not reached the total membership of clubs formed in the offices, warehouses, etc., of London alone.

If our critic, on his journeyings to and fro during his stay "of two years" had gone to some of our open spaces and playing grounds any fine evening during the summer months he would have seen a few "facts" to upset his "observations" as now recorded—facts more in accord with things as they are than with those he wants to see.

As to athletic clubs, allow me to inform him that we have athletic clubs as numerous and more diversified than even Germany, whose "gymnastics" are the beginning and end of athletics for the youth of our critic's country, and which, moreover, are practised for the greater part within four walls. Our athletic clubs and associations are, in more ways than one, open and free, without State interference or dragooning of any kind whatever; and without that brutality which so distinguishes a German athletic meeting as it did the gladiatorial shows of Rome.

I am, Sir, yours, etc.,
GEORGE POTTER.

Dulwich.

SIR,—The letter of your correspondent "A Friendly German" in last Sunday's *Referee*, deserves to be printed by the hundred thousand and distributed to the spectators at the great cricket and football matches. The sermon has been preached many times before unheeded, but the points are put admirably in your correspondent's letter, and might appeal to many.

Is there some lover of his country who would attempt to do some good for England by bearing

the cost of printing and distribution of reprints of the letter in the way suggested?

I am, Sir, yours, etc.,

CHARLES T. COUCH.

New Cross, S.E.

THE PHYSICAL DEGENERATION BOGEY.

SIR,—Your correspondent, "A Friendly German," writes in the fulness of his ignorance. The physical degeneration bogey is present in every age and every country. Is it not discussed in Germany? To state that we indulge in sports mainly by proxy is at once absurd and untrue. The "professionalism" and element of "cash" which has entered into popular sports is in some circumstances to be deplored. But let this "Friendly German" turn away from Lord's or the Oval and visit any of the open spaces in and round London or any provincial town. His erroneous ideas would soon be corrected. Your correspondent might also know that our cricketers do not rust in the winter. Does he imagine that no cricketer plays football or that no footballer trains for rowing? Fatuous, friendly German! fatuous!

Germany does not possess a monopoly of gymnasiums either, and your correspondent might have ascertained that fact during his two years' stay had be been a little more observant. We use them mainly in the winter, however. I suppose it is hardly necessary to draw attention to the rowing, running, and swimming matches held in connection with all schools and institutions, where the competitors are not in the least "professional," and which are as fine a form of exercise as any gymnastics. One is also of opinion that polo-playing is preferable to slicing the face with swords and glorying in the hideous scars.

Furthermore there is an aspect in the comparison of our outdoor sports with German ideas of exercise which all Germans fail to see and understand. Gymnasiums savour too much of the military despotism to which Germans are accustomed. The idea of going through, under orders, certain evolutions with mathematical accuracy is repulsive to British ideas of freedom, and exercise of that nature does not produce the physical excellence and exhilaration of mind engendered by our free outdoor sports. It is the same freedom, an integral part of British life, that goes not in fear of prosecution for *lèse-majesté*.

I am sure that all Refereeders must appreciate this friendly German's condescension in instructing us for our welfare; but I don't think we shall need to follow the example of a country where the Government finds it necessary to arrest school children for holding meetings, and where the result of the system set forth by your correspondent seems to tend chiefly in the direction of eye-glasses and obesity.

I am, Sir, yours, etc.,

O. S. T.

Clapton.

SIR,—I should like to ask your correspondent, "A Friendly German," whether in the course of his travels in search of the British sportsman he ever visited Victoria Park, Blackheath, Brockwell Park, or any other of the numerous playing fields round London. If he did not go to these places, he could, by looking at the *Referee*, and seeing a few of the results you publish, have found out that there are Britishers who go in for sport besides those who go to see the spectacular side of it.

Statistics would, I think, show far better than argument how far stronger we are in sport than our "Friendly German" seems to think, and if you could from information in your possession or easily obtainable publish in your paper the approximate number of clubs playing Rugby and Association football, cricket, tennis, hockey, cycling, swimming, rowing, running, gymnastics, etc., the total would, I think, be a complete answer to his contention that we take our exercise by proxy.

The Germans, I understand, consider themselves a very musical nation, and, supposing our friend's line of argument is correct, we must ask them to put their professional singers and bands—whom they delight to go and hear—on the Civil List and make it a dream of every German boy to be a Caruso, but, above all things, they must avoid the blight of professionalism in music.

The Germans are proud of their army as we are of our sport, and because they have for the last four years failed to subdue a few thousand blacks in South-West Africa we do not say that their whole army is a fraud. Our Volunteers would have made a far better show—at all events I think most people will agree with me that, judging from the German record, it would have been impossible for them to have done worse.

Our German friend has given us a picture of an Englishman which tallies with that of a German at a beer hall drinking his sixth pint of lager, who, on reading of the shooting of another black woman in South-West Africa, exclaims, "Hoch, hoch, another victory for the German Army! Alone we did it!"

I can quite believe that our German friend is sending his three thousand cases of cutlery to Sheffield to have them hall-marked, "Made in Sheffield."

I am, Sir, yours, etc.,

A PLAYER.

South Norwood.

"NONE SO BLIND AS THOSE WHO, ETC."

SIR,—It will not do to take our porcine critic too seriously. His blatant grunting is only one of the melancholy results to be expected so long as we have English writers, some with pretensions to eminence, who see goodness in every nation but their own, and who seem, such is their spite against the country in which they were born and bred, to be anxious to drag the English citizen down to the level of your "friendly" correspondent.

Does "A Friendly German" not know that expert opinion is all in favour of outdoor exercises, and against the ordinary indoor gymnasium, where one part of the body is unduly strained, to the detriment and great danger of the other parts? If there is any physical

deterioration in our national physique, it is not owing to our national games, but to the adoption in their stead, on the advice of faddists, of foreign ideas of physical education.

"A Friendly German" says he cannot see. He means he won't see. If he would, he has only to glance over the *Referee's* columns any Sunday in the year to find a refutation of his statement that we take exercise by proxy. A rough calculation of your columns of the 19th inst. devoted to open-air exercises (other than horse racing) shows that over twelve thousand of our youth of both sexes were engaged in healthy open-air exercises on the previous day. And I venture to say your columns do not note a tithe of the athletic exercises indulged in on that day in London alone. And a similar state of things exists all over the country. Let him visit the parks and open spaces (the village greens of our large towns) and any bit of green adjacent to our villages, any day of the year and on summer evenings, our evening schools, institutes, and gymnasiums in the winter evenings, and he will see our youths engaged in athletic exercises, and healthy exercises, too, of which cricket and football are only a small part.

But our "F. G.," still blinking so much that he can't see, actually sees things which are non-existent. We don't puff out our thirty-two inch chest when Brown has made a "century," and think "what devils we English are for sport!" no more than the real German puffs out his sixty-four inch and somewhat dropsical chest when one of his countrymen has achieved some trifling success in the stifling atmosphere of a German gymnasium. Our "F. G." unaccustomed to that natural, modest, and proper pride which any Englishman takes in his fellow-countryman's achievements, must be thinking regretfully of a country where only one is allowed to puff out his chest, all the other would-be puffers being obliged to withhold their puffs or else puff in other countries, always taking care that the one puffer does not hear them.

One word more as to taking exercise by proxy. Suppose we tot up the number of spectators who attend our cricket and football matches, athletic festivals, etc. The total only represents a small proportion of the population. But if we take away from that total those who are past the age for self indulgence in athletic exercises, and those who by reason of their employment have sufficient physical exercise, I make bold to say that five-sixths of the remainder are those who themselves indulge in such exercises, and who, for their guidance, are taking the opportunity to see the best exponents of their particular sport.

I am, Sir, yours, etc.,

P. E. SLEVIS.

London.

"I HEAR your husband is very sick, Aunt Dinah."

"Yes'm."

"Nothing serious, I hope. His condition is not critical?"

"Critical! I should say he wuz! He ain't satisfied with nuffin'."

HONOURS EVEN.

J. H. TAYLOR, of Mid-Surrey, the open champion of 1894, 1895, and 1900, played a 36-holes match on the Engadine Club's 18-holes course at Samaden, near St. Moritz, recently, against Arnaud Massey, the open champion of France. An exciting contest ended in a tie. Although he has been suffering from a cold in the head, Taylor has shown excellent form since his arrival in Switzerland, and has on two or three occasions been round the Samaden course in 69 strokes.

FOOTBALL FIGHTING PRACTICE.

THERE was an unusual and regrettable incident at the first practice match at Blackpool when teams that will represent the Town in the Second League and the Lancashire Combination opposed each other before a good attendance. Several times before the interval (when there was no score) Morris and Connor, the former of the League and the latter of the Combination, were at loggerheads. Half way through the second half Morris, who alleged provocation, kicked Connor. The latter thereupon struck Morris and received a smart blow back, the game having to be stopped. The Combination team won by two to none, Lavery and Connor scoring. Dunkley, of the Bristol Rovers, just signed, played in the League eleven.

UNLUCKY "WOLVES."

THE annual report of the Wolverhampton Wanderers' Football Club shows that in addition to losing their position in the First Division of the League there was a deficiency of nearly £1000 on the season's working. Despite this, however, there was a balance of £163 in hand. The failure of the team last season was ascribed to accidents to the players in the Cup ties.

AT THE ROOT OF THE MATTER.

A SITE has just been acquired from the Ecclesiastical Commissioners in Vincent Square, Westminster, for the erection of a children's hospital of a unique character in this country. Its object is to study and elaborate methods for the prevention and cure of malnutrition in infants so as to render immediately available the knowledge and experience already gained, and more particularly in America, where the subject is a compulsory one in the principal medical schools. At present there is no teacher of pediatrics in this country, although the study of the problem is regarded by the medical faculty as perhaps the most important step towards the improvement of the race, concerning which so much remarkable evidence was recently given before Mr. Almeric Fitzroy's Departmental Committee on Physical Deterioration. A temporary hospital for the development of these ideas was opened about three years ago under the auspices of the Infants' Health Society, and this is now to be replaced by a larger building in a more central part of London.

PHYSIOLOGICAL IRRIGATION.

Importance of Intestinal Cleanliness.

PLANTERS and gardeners have treatises on irrigation. Have mothers or nurses any similar guides? Such books are unknown to modern civilisation. Infants, boys and girls, and adults, are brought up haphazard, and their garden of life becomes choked with weeds. The drought soon makes itself felt, and a little graveyard mound is their usual fate. Before some of us wither and fade, to what a pest weed is our adipose changed for want of life giving water.

Man's most serious physiological fault is the toleration of constipation; or even of semi-constipation induced by the twenty-four hour habit of stooling. In other words, his fault is the toleration of intestinal uncleanliness. And next to this foolhardiness is his negligence in the matter of drinking a sufficient quantity of pure soft water daily to aid in the proper stimulation and circulation of the blood, in the proper elimination of the waste material from the body, and in the proper assimilation of nutriment by the system. If parents would encourage their children to become bibbers of pure spring water daily it would not be easy to make them bibbers of intoxicants in after years. I would give a child all the liquid it desires; I would even encourage it to take more rather than less; and the best liquid of all for this purpose is pure soft water. Man's body is 70 per cent. water. It is therefore a good sized water cask with a ramification of countless canals or pipes imbedded in soft connective tissues, nerves, and muscles, all of which are supported by a bony framework, through the centre of which runs the alimentary canal, down which waters may flow and disappear like unto a stream lost in the sand, to reappear and ooze from the skin, lungs, kidneys, and intestinal canal. Every organ and tissue luxuriates in water; it laves and lives in and by it. With all kinds of food it is introduced into the body. Water acts as a solvent for the nutritious element and as a sponsor for the elimination of foreign substances and worn-out tissues of the system. It also serves to maintain a proper degree of tension in the tissues, which tension is essential to the proper circulation of the lymphatic fluids.

The tonic reaction of externally applied water is well known. But the advantages of the internal use of water are hardly known at all because the reactions of the circulation, temperature, respiration, digestion, and secretions are less noticed.

Two or three pints of cold water at a temperature of forty to forty-five degrees drunk at intervals of half an hour will reduce the pulse from eight to thirty beats. The copious drinking of cold water will act as a diuretic, removing stagnated secretions, and will, at the same time, improve the quality of the pulse and the arterial tone. The drinking of warm water will increase the pulse from five to fifteen beats, and will relax, at the same time, the vessel walls, and also increase the cutaneous secretions to a marked degree.

The drinking of a large quantity of water not only increases the secretions of the kidneys—assisting them in the work of carrying off solid constituents, especially of urea—it also increases the secretions of the skin, saliva, bile, etc. Under proper conditions the internal use of water acts as a stimulant to the nerves that control the blood vessels, a stimulant similar to that produced by its external application.

I advise the drinking of a copious quantity of water daily. There need be no fear that this practise will thin the blood too much; as the ready elimination of the water will not permit such a result to ensue. I would further advise the generous use of water (temperature 60°) at meal times. I pray you do not drink to wash down food; a bad habit of most of us. Drink all you desire; and if you are like many that have no desire for water, cultivate it, even if it takes years. The imbibed water will be in the tissues

in about an hour; and the entire quantity will escape in three and one half hours. The demand on the part of the system for water is subject to great variation and is somewhat regulated by the quantity discharged from the organism. Physiologists declare that water is formed in the body by a direct union of oxygen and hydrogen. But those that have cultivated the drink-little habit need not hope to find an excuse for themselves in this fact: chronic ill health betrays them. Water in organic relations with the body never exists uncombined with inorganic salts (especially sodium chloride) in any of the fluids, semi-fluids, or solids of the body. It enters into the constitution of the tissues, not as pure water, but always in connection with certain inorganic salts. In case of great loss of blood by hemorrhage, a saline solution of six parts of sodium chloride with one thousand parts of sterilised water injected into the nervous system, will wash up the stranded corpuscles and give the heart something to contract upon.

When water is taken into the stomach its temperature, its bulk and its slight absorption, react upon the system; but the major part of it is thrown into the intestinal canal. When it is of the temperature of about 60° it gives no very decided sensation either of heat or cold; between 60° and 45° it creates a cool sensation; and below 45° a decidedly cold one. Water at a temperature of about 50° is a generator of appetite. A sufficient quantity should be taken for that end; say, one or two tumblers an hour or so before each meal, followed by some exercise. Those that have acquired the waterless habit and the many ills resulting from it, will hardly relish cool water as an appetiser; but if they would become robust they must adopt the water habit—a habit that will refresh and rejuvenate Nature.

Water of a temperature between 60° and 100° relaxes the muscles of the stomach, and is apt to produce nausea, especially if the effect of bulk be added to that of temperature. Lukewarm water seems to excite an upward peristalsis of the intestines and thus produces sickness.

Hot water acts as a stimulant and antiseptic, as a sedative and as a food. Water at a temperature of 110° to 120°, or more, will nearly always relieve a foul stomach and intestines. It should be slowly sipped so that the stomach may not be uncomfortably distended. After imbibing a pint or a pint and a half, wait for fifteen or thirty minutes to give it time to pass into the bowels, then drink more if thought advisable. Drink it an hour before meal time. It will excite downward peristalsis, will dilute the foul contents of the stomach; and will thus aid the escape of these contents into the intestines, which latter require the washing process as well. Sometimes it is a good thing to omit one, two, or three meals while the washing process is being continued.

What is Disease?

By J. H. Kellogg, M.D.

THE ancients believed disease to be a malign entity of some sort, an evil spirit, perhaps, which had taken possession of the body of the sufferer. Among savage and half-civilised tribes, this idea still prevails. The ancient method of treating disease, as well as that still in vogue among savages, was quite in harmony with their idea of the nature of sickness. They sought to drive the evil spirit out by making it uncomfortable, employing for this purpose violent means, such as whipping or beating the patient, compelling him to inhale the fumes of burning sulphur or other noxious vapours, or administering to him nauseous and disgusting decoctions of various sorts.

The savage idea seems to be the more disgusting the medicine, the more powerful it is. This notion is not altogether confined to savages. It is a common practice in some city dispensaries which are largely patronised by the ignorant and superstitious, to administer drugs having a strong and unpleasant flavour as a means of inspiring the patient's confidence in the efficiency of the remedies given. Civilised men and women are by no means altogether free from superstitions relating to disease. Multitudes of men and women who are well educated and capable of reasoning intelligently upon almost every

other subject, regard disease as an affliction sent from heaven, or an opposite source, and to be gotten rid of only by the use of some magic, mysterious, or supernatural agency. This erroneous conception of the nature of disease is undoubtedly that foundation of the faith placed by so many in "magnetic healing," so-called "mind cure," "faith cure," and multitudes of highly vaunted but utterly worthless nostrums and trinkets, which are as utterly devoid of healing virtue as the fetish or the amulet of the African.

A correct idea of the nature of disease is essential to an understanding of the natural and the proper methods of treatment. The difference between disease and health is very great in appearance, but much less in fact, when one has a correct understanding of both. The body in a state of health may be compared to a ship sailing with full canvas before a strong, steady breeze. The body in a state of disease may be very aptly compared to a ship in a storm, contending with changeable, adverse winds, and high rolling waves. The water, the winds, and the ship are all the same in the steady breeze and in the storm, but the conditions and relations have changed. The symptoms or phenomena of disease are due to the same violent activities or processes which are present in health, but disturbed by the conditions or causes which are the occasion of the disease. For example, it is natural for the stomach to expel its contents. Whatever is taken into it is passed along by the contraction of the muscular walls of the stomach. Irritating or other noxious substances being taken into the stomach, may occasion such violent contractions of the organ as to expel the offending substances by the mouth, and thus vomiting is often accompanied by complete relief. So also offending substances in the bowels may be discharged by violent intestinal action or diarrhœa. The muscular movements of the intestines are natural in health, and become intensified only in disease. In other cases, the vital actions may be too slow, or suspended altogether, as when the muscles are paralysed, or when an organ becomes inactive through exhaustion or some structural change taking place in it.

Thus it appears that in disease we have to deal with a living, active body, subject to the same laws and principles which govern it during health. There is no suspension of these laws because of diseased conditions, and there are no essentially new principles brought into action From this we may justly conclude that in the treatment of the sick, we do not have to deal with the body as though its processes were utterly new and foreign to its normal state, but rather to do for it the very same things we do for it in health, with such modifications as may be necessary because of exaggerated or deficient activities; just as a ship in a storm needs to be dealt with on precisely the same principles as a ship sailing under ordinary conditions. Sails may be furled to preserve them from being torn into shreds by a fierce wind, but new sails of an entirely different character are not required.

In disease, as in health, we must supply the body with those things needful for the maintenance of life, making in cases of disease such modifications as special conditions may require. The agencies which maintain health are the most powerful means which can be employed for the regaining of health lost; that is, for combating disease.

Experience has shown that air, water, sunlight, diet, exercise, and rest, the means which are the most essential for the preservation of life and health, are the most powerful of all means for the restoration of those who are sick.

FIGHTING CONSUMPTION.

SOME two years ago, in connection with the campaign against consumption, an inquiry and consultation office was established in Berlin with the object of giving advice gratis to persons presumably afflicted with this disease. The report of this Bureau for the past year has just been issued, and gives remarkable results. Six physicians and eleven sisters attended the office ten times weekly; 15,661 persons were examined medically; and, in addition, 18,644 visits were made to dwellings, 365 beds were granted, 2765 persons were helped with their rent and in other ways, for purposes of observation, 804 persons were placed in hospitals, 622 children were sent to children's hospitals, 1000 more to homes in the woods or other suitable places, and 8200 dwellings where consumption had set its roots were rendered sanitary. The Bureau, altogether spent something like 500,000 marks in its remarkable work of charity.

—— ARTICLETTES. ——

THE FOOD OF ARABIAN PORTERS.

ARAB carriers bear great loads upon their backs, and go at a trotting pace from 6 a.m. to 6 p.m. "During the month of Ramadan," says the *Vegetarian Messenger*, "the Koran forbids the taking of food between sunrise and sunset, and this law is said to be held sacred and rarely violated. Not only do these porters continue their arduous physical exertion during the twelve labouring hours of the day without taking any food during that period, but the French Inspectors who are in charge of the gangs told our informant that they could work better during the month of the fast than at any other time of the year, because their energy was not needed for digestion. At eventide, these Arabs have a moderate meal of wheat-meal porridge, mixed with large proportions of butter (it is to be had cheap) or olive oil. Their expenditure for food is not more than six or seven cents. a day, and the only luxury which they permit themselves is a cup of very strong black coffee and a cigarette.

THE POPULAR BANANA.

BANANAS have suddenly become the most popular of all fruits, especially for consumption in public, the reasons for this vogue being many and obvious. A banana can be peeled without the use of a knife. It grows in the most convenient of all shapes for eating. It does not create thirst, nor require sugar; it contains neither free juice, nor stones, nor pips. In a banana there is nothing that can choke a person, and, above all, it does not make the hands sticky. It can always be bought ripe for eating, and it remains ripe for a convenient period—it is not like the pear, which costs sixpence and is only at its best for half an hour. A banana is said to contain more nourishmsnt than an equivalent size of beefsteak, and it is certainly less deadly to the digestion. If it be bought in the bunch, care should be exercised lest small and excessively poisonous snakes should have got into the roots of the bunch by mistake. These little reptiles have sometimes escaped notice, and it is well to remember that their bite is invariably fatal. Otherwise the banana is a fruit without vices, and its value as an article of food is leading to the development of a new industry, which will, we hope, be of assistance in binding the West Indian Colonies to the Mother Country. At the same time, observes the *Daily News*, even banana skins should not be thrown about the streets, and we hope that a paternal County Council will succeed in its efforts to prevent the abuse of what has become a blessing to humanity —from babies upwards.

HATS AND HEADACHE.

MEDICAL men have lately been called to attend upon a peculiar headache, accompanied by a tired feeling in the skin of the forehead and temples.

At first it was supposed that this was due to the hot weather, but it is now realised that it is owing to the habit of wearing boating straw hats. Sufferers describe it as more disturbing than the ailments caused by excessive cycling or even by a banana fall.

The eyes are particularly affected, and physicians have come to the conclusion that this arises from the perpetual effort necessary to keep the hat on in a wind. The eye muscles are strained upwards in the endeavour to ascertain whether the hat is fixed on the head, and the muscles of the forehead are kept wrinkled, and in time bag painfully, in the attempt to fix the hat as rigidly on the cranium as possible.

Some of the symptoms are a tendency to walk bent, as if a heavy weight were suspended from the nose, while the eyes show a large white space under the pupils in the effort to glare upwards at the brim, impossibility of looking at the feet, and a habit of glancing sideways as if in fear of the police.

It is said that some City clerks who have been recently in Margate, and there habitually wore straw hats, are so strained in their eyes that they can no longer add up columns of figures, and are under notice from their employers in consequence.

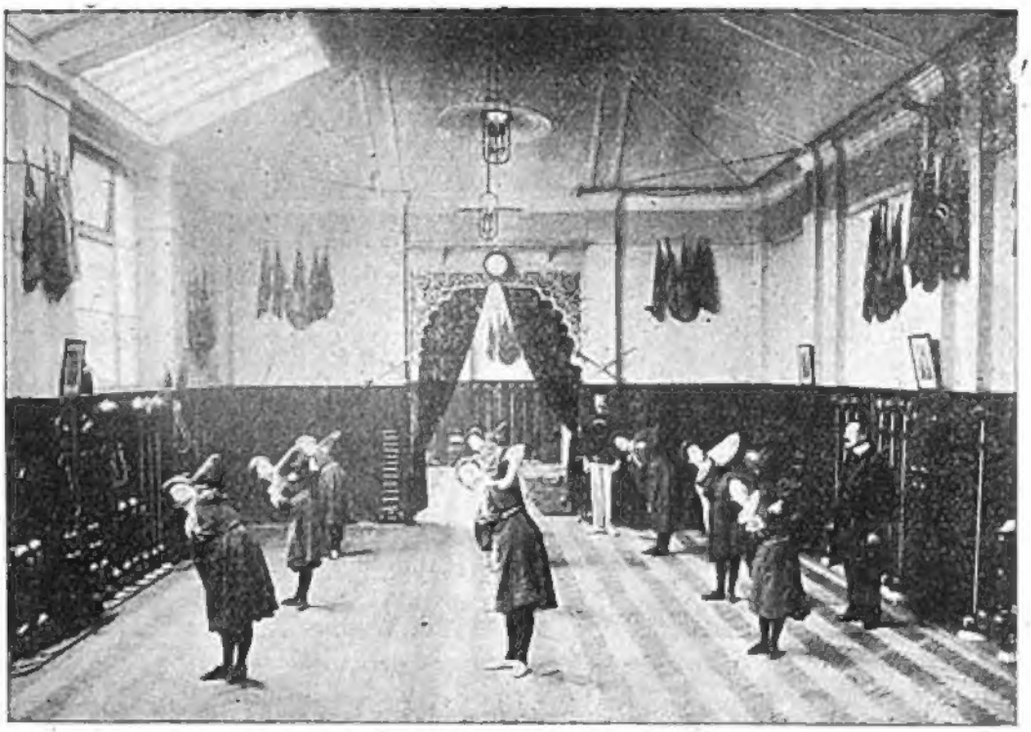
The only palliatives suggested are that a thick strip of flannel should be sewn round the inside of the hat where it rests on the head, so as to make it stick better, and that straws should never be worn without a cord attached to the coat lapel.

DANGEROUS OPERATIONS.

THE pretence of curing a disease, writes a correspondent of the *Daily Mail*, by removing the part chiefly affected, seems far from satisfactory. The same principle would involve the curing of cold in the head by decapitation. And, no doubt, many doctors would make the excuse in that case as they do with the appendix, that they have not discovered any use for the organ.

A friend of mine, of strong physique, recently died within two days of an operation for appendicitis. The operation was successful, so we heard, but complications afterwards set in. Of course they did. If a sick man is subjected to partial dissection, what else can be expected but complications?

That increase of operations is accompanied by increase of deaths will seem less puzzling to many than to the medical officer for Stepney.



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COMEDY—At 8.30, "Raffles." Mat. Sat. at 2.30.

COURT—At 8.15, "You Can Never Tell." Mat. Wed. at 2.30.

CRITERION—At 8.30, "The Prince Chap." Mat. Sat. at 2.30.

LYRIC—At 8.30, "The Sins of William Jackson." Mat. Wed. and Sat. at 3.

PRINCE OF WALES'—At 8.15, "See-See." Mat. Wed. at 2.15.

ST. JAMES'—At 8.15, "His House in Order." Mat. Wed. at 2.

VAUDEVILLE—At 8, "The Belle of Mayfair." Mat. Wed. and Sat. at 2.15.

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GARRICK—At 8.30, "The Morals of Marcus." Mat. Wed. and Sat. at 2.30.

DUKE OF YORK'S—At 8.45, "Toddles." Mat. Thursday at 2.

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